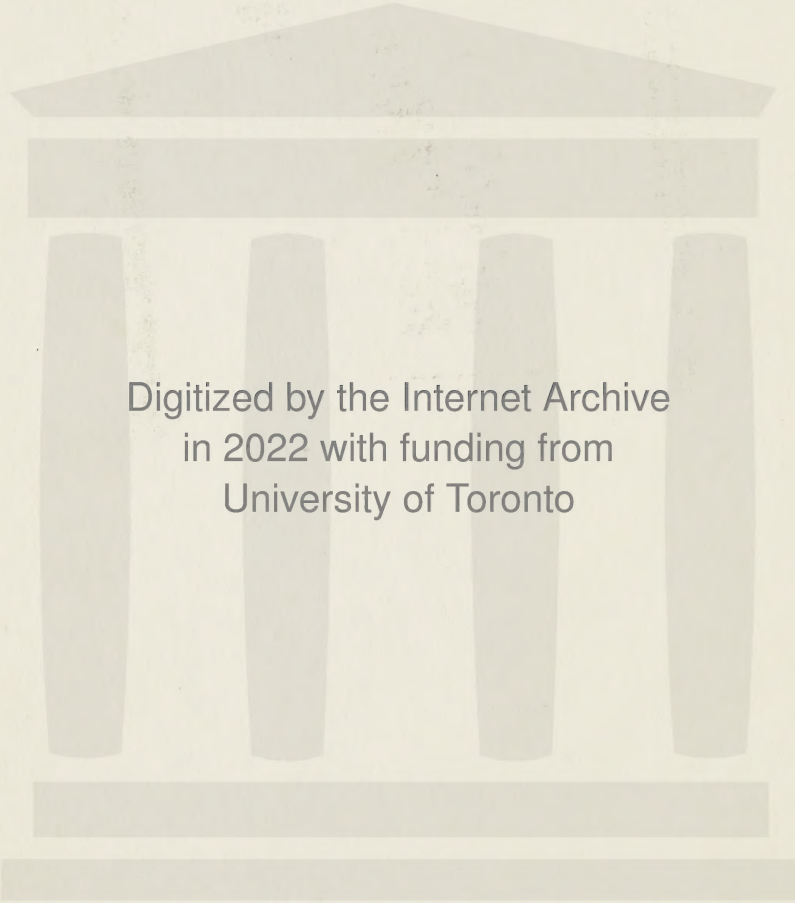




Digitized by the Internet Archive
in 2022 with funding from
University of Toronto

Gov Doc.
Can
Ag

Canada. Agriculture, Dept. of

CAI DA 21- E11

A

THE

ECONOMIC ANNALIST



927 L

FEBRUARY 1953 - ~~DECEMBER 1955~~

Vol. XXIII, ^{XXV}(No. 1)

DEPARTMENT OF AGRICULTURE
OTTAWA, CANADA



645078
2.11.86

THE ECONOMIC ANNALIST

A BIMONTHLY REVIEW OF AGRICULTURAL BUSINESS

G. P. BOUCHER, Editor

FEBRUARY 1953

Vol. XXIII, No. 1

CONTENTS

	Page
The Economic Situation.....	3
Farm Forestry in Ontario..... <i>D. J. Packman</i>	5
Farm Ownership in Quebec..... <i>A. Gosselin</i>	11
Feeder Cattle—a Comparison of Recent Price Relationships in Canada and the United States..... <i>M. Rachlis</i>	15
Government Measures Affecting Agriculture..... <i>V. H. Matte</i>	18
Publications of the Economics Division.....	24
Other Publications.....	24

MARKETING SERVICE, ECONOMICS DIVISION

J. F. BOOTH, Chief

Published by Authority of the Right Honourable James G. Gardiner,
Minister of Agriculture

ANNUAL AND MONTHLY INDEX NUMBERS

WHOLESALE PRICES, FARM PRICES AND LIVING COST INDEXES

Year	Wholesale Prices 1935-39=100				Farm Prices of Agricultural Products 1935-39=100 (e)	Commodities and Services used by Farmers 1935-39=100		Cost of Living 1935-39=100		Consumer Price (1949=100) (i)
	(a) General Wholesale Index	(b) Farm Products	(c) Field Products	(d) Animal Products		(f) Equipment & Materials	(g) Eleven Factor Index	(h) Farm Living Costs	(i) Urban Living Costs	
1913.....	83.4					85.4		80.1	79.1	49.2
1914.....	85.4					90.2	85.3	82.3	79.7	49.6
1915.....	91.8					96.9	91.6	86.5	80.7	50.3
1916.....	109.8					101.7	100.5	93.7	87.0	54.2
1917.....	148.9					140.7	140.5	111.5	102.4	63.7
1918.....	166.0					164.1	160.2	131.1	115.6	72.0
1919.....	174.7					169.1	167.9	143.0	126.5	78.8
1920.....	203.2					190.1	186.5	171.3	145.4	90.5
1921.....	143.4					147.4	152.5	139.9	129.9	80.9
1922.....	126.8					124.6	134.1	127.9	120.4	74.9
1923.....	127.7					118.3	130.6	128.3	120.7	75.2
1924.....	129.5					122.3	131.9	125.5	118.8	74.0
1925.....	133.8					123.2	131.8	123.9	119.8	74.6
1926.....	130.3	144.4	158.5	130.2		119.9	130.6	121.1	121.8	75.9
1927.....	127.3	138.6	149.4	127.8		119.9	131.2	119.8	119.9	74.6
1928.....	125.6	136.3	134.3	138.2		118.3	129.3	118.5	120.5	75.0
1929.....	124.6	140.8	137.2	144.4		117.6	127.9	117.3	121.7	75.8
1930.....	112.9	119.5	105.8	133.3		105.6	117.0	113.7	120.8	75.3
1931.....	94.0	78.9	65.0	92.7		92.2	100.9	103.9	109.1	67.9
1932.....	86.9	65.5	60.4	70.5		89.3	93.3	97.8	99.0	61.7
1933.....	87.4	69.3	69.3	69.2		88.8	89.8	95.8	94.4	58.8
1934.....	93.4	83.5	80.5	86.5		96.8	95.5	97.9	95.6	59.6
1935.....	94.4	89.2	84.4	94.1	88.0	95.6	95.4	97.9	96.2	59.9
1936.....	96.7	97.9	102.2	93.7	96.9	98.7	98.1	98.3	98.1	61.1
1937.....	107.8	117.4	128.9	106.0	119.7	108.4	105.3	102.9	101.2	63.0
1938.....	102.0	102.9	100.9	104.8	105.0	101.2	101.7	101.9	102.2	63.7
1939.....	99.2	92.6	83.7	101.5	91.8	95.7	99.3	99.5	101.5	63.2
1940.....	108.0	96.1	85.4	106.7	96.8	101.8	106.8	108.5	105.6	65.7
1941.....	116.4	106.6	88.9	124.4	110.2	107.8	116.1	114.1	111.7	69.6
1942.....	123.0	127.1	109.7	144.6	133.1	119.2	131.6	119.0	117.0	72.9
1943.....	127.9	145.4	129.0	161.8	157.8	122.4	143.4	121.7	118.4	74.2
1944.....	130.6	155.3	144.5	166.1	172.4	126.0	148.0	122.8	118.9	74.6
1945.....	132.1	166.4	162.5	170.2	185.7	125.9	152.1	123.2	119.5	75.0
1946.....	138.9	179.5	177.9	181.2	204.1	128.0	157.0	127.1	123.6	77.5
1947.....	163.3	192.2	184.1	200.2	215.8	139.5	170.4	138.3	135.5	84.8
1948.....	193.4	232.1	200.6	263.7	255.8	173.1	197.4	162.8	155.0	97.0
1949.....	198.3	228.7	191.9	265.4	255.4	180.3	204.1	173.2	160.8	100.0
1950.....	211.2	236.7	191.9	281.4	260.8	189.9	210.4	177.6	166.5	102.9
1951.....	240.2	268.6	200.4	336.9	296.8	206.0	230.0	198.6	184.5	113.7
1952.....					266.7	215.8	241.1	209.8	187.5	116.5
1952										
Mar.....	230.8	256.7	230.1	283.3	279.7				189.1	116.9
April.....	226.9	253.8	234.0	273.7	276.5	216.9	243.2	209.6	188.7	116.8
May.....	244.8	252.7	240.0	265.4	269.0				186.7	115.9
June.....	226.5	257.9	244.4	271.4	276.4				187.3	116.0
July.....	225.5	252.8	230.2	275.3	275.6				188.0	116.1
Aug.....	223.9	236.2	195.3	277.2	259.6	212.5	243.4	204.1	187.6	116.0
Sept.....	222.1	225.5	181.9	269.1	250.6				186.5	116.1
Oct.....	221.0	221.3	179.7	263.0	243.3				185.0	116.0
Nov.....	221.9	222.9	179.2	266.5	244.1				184.8	116.1
Dec.....	221.2	222.3	176.4	268.3	244.0				184.2	115.8
1953										
Jan.....									184.4	115.7

(a) Canada. Dominion Bureau of Statistics, Labour and Prices Division. *Prices and Price Indexes*. (Mimeo.) Ottawa, Monthly.

(b) Ibid (a). Wholesale prices of products of Canadian farms.

(c) Ibid (a). Wholesale prices of grains, hay, tobacco and potatoes.

(d) Ibid (a). Wholesale prices of animals and animal products.

(e) Canada. Dominion Bureau of Statistics, Agriculture Division. *Index Numbers of Farm Prices of Agricultural Products*. (Mimeo.) Ottawa, Monthly.

(f) Canada. Dominion Bureau of Statistics, Labour and Prices Division. *Price Index Numbers of Commodities and Services Used by Farmers*. (Mimeo.) Ottawa, Jan., Apr. and Aug. Includes prices of commodities in 8 groups including farm implements, building materials, gasoline, oil and grease, feed, fertilizer, binder twine, seed and hardware.

(g) Ibid (f). Includes the 8 commodities indicated above plus tax rates, interest rates and farm wage rates.

(h) *Price Index Numbers of Commodities and Services Used by Farmers*. Includes food, clothing, fuel, household equipment, health, maintenance and miscellaneous.

(i) *Prices and Price Indexes*. Includes food, rent, fuel and lighting, clothing, home furnishings and services, miscellaneous and retail prices or commodities.

(j) Canada. Dominion Bureau of Statistics, Labour and Prices Division. *The Consumer Price Index*. (Mimeo.) Ottawa, Monthly.

THE ECONOMIC SITUATION

The Agricultural Outlook for Canada in 1953¹.—World production is expected to be a little higher in 1953 than in 1952. Rearmament production will continue to influence economic conditions and employment and income will be sustained at high levels.

The volume of world trade may approximate the 1952 levels. A strong international market for basic commodities is anticipated but trade in some products may be affected by a shortage of dollar exchange. The United States will again be the most important single foreign market for Canadian farm products. Exports to that country are expected to exceed those of 1952.

Domestic demand in Canada will also be strong. Employment and incomes will reach slightly higher levels than in 1952. Agricultural output will fall below the record levels of 1952 if grain yields do not exceed the long-time average. Non-agricultural output, on the other hand, is expected to increase slightly.

Farm income may be less in 1953 than in 1952. Some easing of livestock prices is anticipated and even though marketings may increase, total returns from the sale of livestock may be smaller than in 1952. If grain yields do not exceed the average, returns from this source will also be smaller than in 1952. Total farm operating costs are not expected to change significantly in 1953.

The farm labour situation will not change materially and it will thus be necessary to make a most efficient use of the domestic supplies of labour, supplemented by immigration. Farm supplies are becoming more plentiful and, in general, their prices are not expected to increase in 1953.

World wheat production is expected to reach record levels in 1952-53 but import requirements remain high and a strong market is in prospect. According to current estimates Canada will have some 740 million bushels of wheat available for export and carryover.

Supplies of feed grains are at record levels. Prices of oats and barley will display some firmness at least until the opening of lake navigation in the spring of 1953. Transportation and handling

facilities rather than lack of markets will be the main limiting factors in both the export and domestic movements of wheat and coarse grains.

Increased marketings of livestock and a further easing of prices in the United States during 1953 will probably result in lower prices in Canada, especially for cattle and calves. Marketings of hogs will probably continue at recent high levels through the first half of 1953 and the total volume for the marketing year, October 1, 1952 to September 30, 1953 may be about the same as for the preceding marketing year. Marketings of other classes of livestock during the 1952-53 marketing year are likely to exceed those of the 1951-52 marketing year.

Milk production may rise to about 17 billion pounds in 1953, a slight increase over the 1952 output. More milk will be used as fluid milk and ice cream. Production of butter, cheese and concentrated milk products may increase slightly but relative changes in the output of these products will be determined mainly by the export market situation. Foreign demand for concentrated milk products will probably remain as strong as in 1952. Domestic demand for all dairy products will be as strong or slightly stronger than in 1952. The overall price position for dairy products is not likely to change materially.

Fewer laying hens, a smaller egg production and slightly higher egg prices are anticipated for the first half of 1953. Egg prices during the fall are not likely to differ much from those in the fall of 1952. Marketings of farm chicken will likely be about the same as in 1952. Prices for poultry meat will probably remain close to the 1952 levels.

Domestic supplies of flaxseed, rapeseed and soybeans are larger but supplies of sunflower seed are smaller than in 1951-52. Substantial quantities of flaxseed and rapeseed will be available for export but these will be partly counterbalanced by imports of soybeans. The downward trend in vegetable oil prices is not expected to continue during 1952-53. Prices of vegetable oil meal are expected to remain firm but not to exceed those of 1951-52.

Seed supplies are large enough to meet domestic needs and surplus quantities of some kinds will be available for export. The principal export market for most

¹Based on statements presented at the annual Federal-Provincial Agricultural Conference held in Ottawa, December 1 and 2, 1952.

kinds of seeds will be the United States, but the demand for some forage crop seeds may be lower than in 1952. With the exception of timothy and crested wheat grass prices of forage crop seeds are expected to be a little lower than in 1952.

Current Economic Activity.—Wholesale and farm product prices are following a downward trend. In general, however, prices have not declined as much in 1952 as they had gone up in 1951.

Farm Prices.—Canadian farm product prices at terminal markets were slightly firmer in December 1952 than during the preceding months. The composite index advanced from 222.1 to 224.0 between November 28 and December 26. Strength was concentrated in animal products and the index for that series moved from 266.1 to 272.4 between November 28 and December 26. Prices were higher for steers, lambs, calves and eastern butterfat but egg prices were seasonally lower. Lower prices for certain grains, notably flax and rye, potatoes and raw leaf tobacco outweighed higher prices for hay; the index for the field products group was thus lowered from 178.0 to 175.6.

Farm Improvement Loans Act, 1944.—On December 5, 1952 the Acting Minister of Finance asked the House to consider the following resolution:

That it is expedient to bring in a measure to amend The Farm Improvement Loans Act, 1944, to extend its operation for a further period by closing out on March 31, 1953 in lieu of February 28, 1954, the present three year pool of loans guaranteed by the government under the act and by providing for a new three year pool commencing April 1, 1953 and ending March 31, 1956; to provide further that the maximum amount of bank loans made in the new period and guaranteed under the act shall be three hundred million dollars.

Water Resources.—The Minister of Resources and Development, on December 5, 1952, asked the House to consider the following resolution:

That it is expedient to introduce a measure to authorize grants of assistance to provinces for the conservation of water resources under the terms and conditions specified in the said measure, such grants not to exceed thirty-seven and one-half per cent of the projects and to be paid out of moneys appropriated by parliament for the above-mentioned purposes; and to provide that all officers, clerks and employees required for carrying out the provisions of the measure shall be appointed in accordance with the provisions of the Civil Service Act.

THE CONSUMER PRICE INDEX

The new consumer price index is the most comprehensive retail price index ever constructed for Canada. The index is based on postwar expenditure patterns and is calculated on a 1949=100 basis. It serves the same purpose as the cost-of-living index and measures the average percentage change in the retail prices of goods and services purchased by a representative cross-section of urban families. The weighting diagram of the index is based on expenditures reported by 1,517 families for the year ended August 31, 1948, supplemented by four food expenditure surveys in 1948 and 1949. The index itself comprises 224 items of purchase; almost 40 per cent more than in the cost-of-living index.

The new title has been adopted to stress the fact that the index is a measure of price change and is not affected by changes in standards of living. To facili-

tate comparisons of the movements of the consumer price index with those of the cost-of-living index the Dominion Bureau of Statistics has converted the cost-of-living index to the 1949 base and calculated the consumer price index forward from January 1949.¹

The Dominion Bureau of Statistics' last cost-of-living index (1935-39=100) will be that for March 1, 1953.

The Economic Annalist will include this index in the April 1953 issue, after which it will discontinue publication of the cost-of-living series. Publication of the new consumer price index begins with the present issue of *The Economic Annalist*.

¹For further explanatory details on the construction of the consumer price index see *The Consumer Price Index, January 1949-August 1952*, prepared by the Prices Section, Labour and Prices Division, Dominion Bureau of Statistics, Ottawa, Canada.

FARM FORESTRY IN ONTARIO

D. J. PACKMAN

The forests which originally covered most of Southern Ontario constituted a hindrance to agricultural settlement. Settlers slashed and burned the forest to clear the land for cultivation. For some years there was practically no market for the products of the forests and only a small part of the cut timber was actually used. But, later, lumber and other forest products became an important source of income. Their exploitation became an even more important objective than the raising of farm crops and this led to a rapid depletion of the lumber resources.

Forestry has now become a minor enterprise in Southern Ontario. The depletion of forest resources has meant a marked and rapid decline in forest industries. Processing facilities are no longer available in many sections to provide satisfactory outlets for farm woodland products.

Farmers have been inclined to look at their woodlots as a source of firewood and occasional income instead of as an integral part of their farm business. Many have striven to achieve and maintain high production per acre or per animal in agricultural enterprises but only a few have given as much attention to the productivity of their woodland.

The farm woods provide a source of wood products for the farm needs, and some cash income. They prevent excessive soil erosion and water run-off, act as a refuge for game birds, protect the crops and the farmsteads against wind and have aesthetic and recreational value. Until recently very little attention has been given to the economic aspects of the maintenance and exploitation of the farm woodlots. Even now too many farmers continue to deplete this very valuable asset through excessive cutting or let it deteriorate either through grazing by sheep and other farm animals, or through lack of or poor farm forestry management.

Forest trees have certain characteristics which distinguish them from other farm crops. A tree does not reach market age in a single growing season; some species may take as long as 50 to 75 years to produce a tree of sawlog size. Woodlot owners, however, do not have to start from the seeding or planting stage since their woodlots may already have a large number of trees of log size. Products such as fence posts and pulpwood can be produced in a much shorter period. Light cuts covering all or part of the farm forest can usually be made every year.

If trees are planted on bare lands, a long period will elapse before these trees become marketable, but with short rotation crops such as Christmas trees this period will not generally extend over 15 years. Other products such as pulpwood require a minimum of 40 years, cedar posts 35 years, and merchantable timber about 65 years from the date of planting to harvest.

ECONOMIC STUDY OF FARM WOODLOTS

In order to obtain information on the organization and operation of farm woodlots data were collected on 162 farms throughout Southern Ontario during the months of June and July 1951.¹

The field work was conducted by the Economics Division with the assistance of the Farm Economics Branch of the Ontario Department of Agriculture and the Ontario Department of Lands and Forests. For the purposes of this study, the farming areas of Southern Ontario were divided into two separate districts by a line running north of the western boundary of Durham and Victoria counties. These districts are designated as the eastern and western districts.

Four representative townships were selected in each of the districts namely: Roxborough, Lanark, Hungerford and Hope townships in the eastern district and Tecumseh, Arran, Waterloo and Lobo townships in the western district (see map). About twenty full-time commercial farms were visited in each township.

The full-time commercial farm was defined as a farm whose operator spent most of his time on the farm, received more than one-half of his income from the sale of farm products, excluding forest products, and owned a farm woodlot in the year 1950. In this way, it was possible to study farm forestry from the point of view of farmers who are primarily engaged in the production of farm products, and to obtain information on the production and management practices followed on farm woodlots.

¹ A final report on this study will be published in bulletin form by the Economics Division.
68307—2



Location of Townships Studied, 1950-51

Farm Organization.—The farms visited had a much larger acreage than the average Ontario farm; they averaged 242 acres per farm, of which 90 acres were in crops. Farms in the eastern district averaged 273 acres compared with 208 acres in the western district. The main difference in land use patterns between the two districts was in the amount of non-tillable land. The eastern farms had an average of 161 non-tillable acres per farm but the western farms had only 61 acres per farm. The larger woodlots were in the eastern district; they averaged 81 acres per farm compared with 35 acres in the western district. The wooded area ranged in size from an average of 25 acres per farm in Lobo township to 133 acres in Lanark township.

The livestock program differed little between the two districts. The typical commercial farm had about 11 cows, 13 head of heifers and steers, seven calves, two brood sows, and a flock of about 95 hens.

The total capital investment averaged \$22,974 per farm for all 162 farms, \$18,610 per farm in the eastern district and \$27,741 in the western district. On the average, real estate represented 55 per cent of the total investment and there was very little difference between the average for the two districts.

Table 1.—Distribution of Income per Farm from the Sale of Farm Products, 162 Farms, Southern Ontario, 1950-51

	Eastern District	Western District	All Farms
	—per cent—		
Crops.....	8.5	14.6	11.6
Milk and cream.....	33.2	28.0	30.5
Livestock, eggs and wool.....	53.8	54.9	54.3
Woodlot products.....	4.5	2.5	3.6
Total.....	100.0	100.0	100.0

The average farm woodlot was valued at \$1,437 or 11.3 per cent of the total real estate value of the farm. Corresponding figures for the eastern and western districts were 13.6 and 9.7 per cent respectively. Real estate values were higher in the western district because of the larger cropland acreage, the more favourable location with respect to markets, and the more intensive type of agriculture prevailing in the western district. Woodlots averaged \$43 per acre in the western district compared with \$17 in the eastern district and \$24 for all woodlots.

Gross income from the sale of farm products, including forest products, was estimated to be about \$7,020 per farm in the eastern district and \$15,578 per farm in the western district. The main source of income in both areas was from the sale of livestock, eggs, and wool, which represented 54 per cent of the total cash farm income per farm in the eastern area, and 55 per cent of that income in the western area (Table 1). Sales of woodlot products, including maple syrup, averaged 4.6 and 2.5 per cent of the total farm income in the eastern and western areas respectively.

Woodlot Production, 1950-51.—The average woodlot produced wood products valued at \$446, and \$70 worth of maple syrup making a total value of \$516 (Table 2). In terms of value, the cut of logs for lumber was about equal to fuelwood required, or an average of about \$200 per farm. The production of pulpwood, posts and miscellaneous wood products was of considerable importance on a few farms but averaged only \$42 per farm. The production of maple syrup averaged \$70 per farm.¹

The eastern district harvested the largest quantity of woodlot products per farm. These products averaged \$599 per farm compared with \$424 per farm in the western district. The average value of fuelwood production was about \$198 per farm in both districts, and the value of logs cut for lumber averaged \$284 per farm in the eastern and \$120 per farm in the western district. Of the 162 farms visited, only

Table 2.—Average Woodlot Production per Farm, 162 Farms, Southern Ontario, 1950-51

	Eastern District 85 Farms		Western District 77 Farms		All 162 Farms	
	Quantity	Value	Quantity	Value	Quantity	Value
		\$		\$		\$
Lumber (f.b.m.).....	5,497.0	284	1,719.0	120	3,702.0	206
Pulpwood (cord).....	0.2	3			0.1	1
Fuelwood (cord).....	15.5	198	13.6	199	14.6	198
Posts (no.).....	34.2	10	25.8	11	30.2	11
Miscellaneous.....		25		37		30
Total, wood products.....		520		367		446
Maple syrup (gals.).....	19.8	79	12.0	57	16.0	70
Total value.....		599		424		516

four sold veneer logs and three cut pulpwood; all of these farms were in the eastern district. Eight farms reported no woodlot activity in the 1950-51 crop year and three reported no production except from the maple syrup enterprise.

In terms of value, lumber was the most important woodlot product on the eastern farms enumerated, amounting to 54.6 per cent of the total value of wood products harvested. On the western farms, lumber accounted for 32.7 per cent of the value of wood products and was second to fuelwood. About 49 per cent of the farms in both districts cut logs suitable for sawing into lumber.

Pulpwood was not produced on the majority of the farms studied but during the 1950-51 crop year three farms cut an average of about six cords. However, with the increased prices paid for pulpwood during the summer of 1951, several farmers were planning to cut more pulpwood in the winter of 1952.

Fuelwood was cut on 91 per cent of the farms in the 1950-51 crop year; on most of these farms, it was the most important forest product in terms of value. Each farm cut an average of 14.6 cords valued at \$198 or \$13.65 per cord. About one-third of the farms supplied two or more houses and so the cut of fuelwood per farm was

¹ Packman, D. J. The Production of Maple Syrup on Ontario Farms. *The Economic Annalist*. June 1952, pp. 65-69.

Table 3.—Woodlot Product Sales per Farm, 162 Farms, Southern Ontario, 1950-51

	Eastern District 85 Farms		Western District 77 Farms		All 162 Farms	
	Quantity	Value	Quantity	Value	Quantity	Value
		\$		\$		\$
Lumber (f.b.m.).....	4,133.0	207.48	1,092.0	77.25	2,688.0	145.58
Pulpwood (cord).....	0.2	2.71			0.1	1.42
Fuelwood (cord).....	2.2	27.03	2.0	35.86	2.1	31.23
Posts (no.).....	13.8	4.24	8.4	3.44	11.2	3.86
Miscellaneous.....		24.39		36.08		29.94
Maple syrup (gals.).....	15.1	59.35	9.2	43.19	12.3	51.67
Total value.....		325.20		195.82		263.70

higher than might be expected on many Ontario farms. A considerable number of the farms visited burned coal or oil but also cut some wood for home use. The production of posts was confined to the 52 farms which had a cedar bush. The average production consisted of 30 posts per farm valued at 37 cents each, at the farm. Other farms produced a considerable quantity of hydro poles, telephone poles, beams and Christmas trees, which averaged \$30 per farm for all farms, or \$448 per farm for the 11 farms reporting.

Sale of Wood Products.—The average farm visited received \$212 from the sale of wood products and \$52 from maple syrup sales—a total of \$264 from the sale of woodland products (Table 3). On the average, \$146 or 69 per cent of the total income from the sale of woodland products was derived from the sale of lumber. Fuelwood sales averaged \$31 per farm, posts \$4, pulpwood \$1, and miscellaneous products \$30 per farm.

Sawlogs for lumber were by far the most important forest product sold in both areas. In the eastern district, 33 of the farms visited reported the sale of sawlogs for lumber, which amounted to an average of \$534 per farm for the equivalent of 10,008 board feet of lumber. The average for the 19 farms reporting the sale of sawlogs in the western district was \$313 per farm for 4,425 board feet equivalent of lumber.

Fuelwood was cut on 148 farms, but only 27 farms reported its sale; these sales averaged 12.7 cords per farm. In the eastern area only four of the 85 farms reported the sale of veneer logs and three the sale of an average of 6.3 cords of pulpwood; none of the farms visited in the western area sold these products. Two of the farms sold an average of 1,641 Christmas trees.

The total gross cash income received by the 162 farms from the sale of forest products, including maple products, during the period June 1, 1950 to May 31, 1951, was \$42,720 (Table 4).

Table 4.—Distribution of Farms According to Sales of Forest Products, 162 Farms, Southern Ontario, 1950-51

Sales Returns from Forest Products	Farms Reporting		Sales Returns from Forest Products		
	Number	Per Cent	Total	Per Cent	Average per Farm
\$			\$		\$
0.....	83	51			
1- 250.....	37	23	4,489	10.5	121
251- 500.....	14	8	5,369	12.6	384
501- 750.....	9	5	5,263	12.3	585
751-1,000.....	6	4	5,082	11.9	847
1,001-1,500.....	7	4	8,730	20.4	1,247
Over 1,500.....	6	5	13,787	32.3	2,298
Total.....	162	100	42,720	100.0	264

The group with individual income from the sale of forest products amounting to more than \$1,500 was composed of operators of large farms. Incomes reported by the six operators ranged from \$1,584 to \$3,500.

There are several reasons for the unequal distribution of income. Cuttings on any one farm are usually periodic and several years apart. Had it been possible to obtain information covering a longer period of time, the distribution might have been different. There would still be a number with very small incomes from this source, however, because of the lack of woodland, poor conditions of growing stock, unwillingness to sell at existing prices, and alternative employment opportunities during 1950-51.

Wood Products Used on the Farm in 1950-51.—Most of the wood products used on the farm came from farm woodlots; the average value of these products was \$231 per farm (Table 5).

On the average, 12.2 cords of fuelwood were utilized on the farm, valued at \$165 or 71 per cent of the total value of the wood used. Only one farm reported the use of coal and fuel oil exclusively, although many of the farm dwellings, particularly in the western area, burned some coal or fuel oil.

The average farm utilized 777 board feet of new lumber valued at \$53, and 26 wooden fence posts, of which about four were purchased. The use of iron fence posts appears to be gradually replacing the wooden type especially in the western area where 12 farmers reported the purchase of iron fence posts during the 1950-51 crop year.

Table 5.—Average Annual Farm Use of Forest Products, 162 Farms, Southern Ontario, 1950-51

	Eastern District 85 Farms		Western District 77 Farms		All 162 Farms	
	Quantity	Value	Quantity	Value	Quantity	Value
		\$		\$		\$
Lumber (f.b.m.).....	1,044.0	64	482.0	42	777.0	53
Fuelwood (cord).....	13.3	171	9.7	159	12.2	165
Posts (no.).....	23.9	8	28.9	16	26.3	12
Miscellaneous.....		1		1		1
Total, wood products.....		244		218		231
Maple syrup (gals.).....	2.7	11	2.7	13	2.7	12
Total value.....		255		231		243

Reforestation.—In Ontario thousands of acres which had once been cultivated are now being left idle. Their cultivation would not bring profits commensurable with the high investment required. Indeed, it is not practical to use high quality seeds and fertilizers on low quality land. Fortunately, much of this land is well suited to the production of forest crops and will likely revert to its original cover.

Some reforestation work is already underway. Fifty-one of the farms visited during 1951 had planted an average of 6,027 trees during the 1930-1950 period. These trees were supplied by the Ontario Department of Lands and Forest. About one-half of the farms visited in the western area and one-seventh in the eastern area of Southern Ontario had planted trees during this period.

Pasturing Farm Woodlots.—Grazing is harmful to the farm woodlot. This is evident by the comparative returns obtained from grazed and ungrazed woodlots. During the year ending May 31, 1951 returns averaged \$10.21 per acre on 63 ungrazed woodlots, and only \$5.62 per acre on 65 grazed lots. Ninety-nine of the 162 farm woodlots were pastured but 34 of them on only part of the wooded area.

Perhaps the most significant difference between the two groups of woodlots was in the quality of the products harvested. The ungrazed woodlots produced a large proportion of high quality sawlogs and poles whereas fuelwood, a low grade product, was the predominant tree crop harvested from the grazed woodlots.

Labour on the Farm Woodlot.—In managing his business a farmer endeavours to secure the highest returns per hour of labour, and to fully utilize his labour resources over the year as well as over each workday. But in many parts of Ontario there are months when very little work can be done on the farm. Farmers with woodlots are thus fortunate because they can employ their labour resources between chores.

Labour is the largest single expense in woodland operation. If valued at 60 cents per hour it would represent about 70 per cent of the total cost of harvesting wood products and 47 per cent of the total cost of making maple syrup on the farms visited.

Analysis of the data collected in 1951 indicates that, on the average, the farmers who worked in the woods during the crop year 1950-51 utilized 342 hours of productive labour there, of which 294 hours were used for the production of wood products and 48 hours for maple syrup. The total includes the time required to go to and from the woodlot.

Most of the woodlot products such as sawlogs and fuelwood are harvested at the same time. It was thus impossible to secure data on the returns to labour for each type of product. However, data on returns to labour were obtained for the farms harvesting fuelwood only, those where the major part of the harvest consisted of fuelwood, and those where sawlogs made up the major part of the total harvest (Table 6).

Table 6.—Operating Returns per Hour of Labour, by Type of Product Harvested, 140 Farms, Southern Ontario, 1950-51

Type of Harvest	Number of Farms	Returns per Hour of Labour *
		\$
All farms.....	140	0.95
Fuelwood only.....	45	0.29
Mostly fuelwood.....	67	0.79
Mostly sawlogs.....	28	1.67

* Excluding change in inventory.

Operating costs other than labour and changes in inventory amounted to \$171 per farm, leaving a net return of \$279 per farm from forest activities. The average woodlot required 294 hours of labour for a net return of 95 cents per hour.

The most common woodlot activity for 91 per cent of the farmers was the harvest of an annual crop of stove wood. On 45 of the farms, fuelwood was the only wood product cut during the year. The average value of production on these farms was \$175 for 12.4 cords of wood or \$14.11 per cord at the farm during the 1950-51 crop year. Operating costs other than labour averaged \$118 per farm, leaving a net operating return of \$57 from the year's forestry operations. On the average, 193 hours of labour were employed and returns amounted to 29 cents per hour of labour.

Sixty-seven of the 140 farms reported that the main woodland product harvested was fuelwood, but some sawlogs, posts and other products were also harvested. A large part of the fuelwood was a by-product of the trees cut for sawlogs and poles. On the average, these farms harvested 18 cords of fuelwood, 1,850 board feet equivalent of sawlogs and 43 posts per farm. This harvest, plus the inclusion of various other products valued at \$28 provided an average income of \$410 per farm. The average hourly return to labour was estimated at 79 cents for 299 hours of labour per woodlot.

Only 28 of the 140 farms were primarily engaged in harvesting sawlogs during the 1950-51 crop year. These farms produced an average of 12,690 board feet equivalent of sawlogs, 15.7 cords of fuelwood, 71 posts and \$86 worth of miscellaneous products; the total value of these products averaged \$990 per farm. Operating returns were considerably higher than on farms engaged in any other type of woodland activity and averaged \$1.67 per hour for the 441 hours of labour employed on the average farm.

During 1950-51 the harvest of woodlot products on the farms studied provided a substantial contribution to farm income and at the same time supplied productive work for 342 hours of farm labour during the winter months.

FARM OWNERSHIP IN QUEBEC

A. GOSSELIN

A previous article on farm ownership in Quebec¹ dealt with methods of farm acquisition; age, marital status and farming experience of the farm operators at time of farm acquisition; typical ways of becoming a farm owner; and methods of financing the acquisition of a farm.

The present article will continue this discussion of farm ownership with an analysis of the status of the farm businesses at the time of the 1950 study and of the changes in size and value of those farms from 1900 to 1950.

Types of Farms.—The family farm is typical of the farm operating unit in Quebec. It is usually of such a size that it can be operated solely by the farmer and his family, except for some hired help during the busiest days of the year.

An appraisal of soil productivity and a rating of the farm as a whole was supplied by the farm operators themselves; 43 per cent of these operators graded their farms as good, 45 per cent graded them from fair to poor and 12 per cent graded them as poor. About two-fifths of the farm owners reported that the major part of their farm was flat, one-third reported that it was rolling and one-fifth stated that it was either hilly or very stony.

Size of Farms.—About one-fourth of the owners started farming with less than 75 acres of land, one-fourth had between 75 and 100 acres and one-fifth had 100 to 125 acres (Table 1). Only a little more than one-fourth of the farms had over 125 acres. About two-thirds of the owners did not acquire more land thereafter,

Table 1.—Size of Farms at Time of Acquisition and at Time of Survey,
747 Quebec Farms, 1950

Size of Farm acres	Farms Reporting No. per cent		Farms Reporting							
			No Change		Increased Acreage			Decreased Acreage		
					Number of Farms	Original Acreage	Acreage in 1950	Number of Farms	Original Acreage	Acreage in 1950
	No.	per cent	No.	acres	No.	acres	acres	No.	acres	acres
Less than 75...	200	26.8	110	55.5	89	53.1	125.1	1	71.8	63.3
75-99.....	174	23.3	109	85.3	53	85.1	165.4	12	81.2	64.5
100-124.....	160	21.4	124	105.5	29	104.0	171.3	7	110.5	80.9
125-149.....	79	10.6	60	131.7	14	134.0	200.5	5	136.8	84.7
150 and over...	134	17.9	104	211.5	18	202.1	313.0	12	229.1	136.4
Totals and averages..	747	100.0	507	115.1	203	87.5	164.1	37	142.0	93.6

a little more than one-fourth increased the size of their farms and five per cent reported a reduced acreage. Forty-three per cent of those whose farm acreage remained the same, and seventy per cent of those who increased their farm acreage had less than 100 acres. The largest increase in size of farms was recorded for the groups with the smallest acreage at the beginning.

The average size of farms had increased from 109 acres at the time of acquisition to 127.4 acres in 1950, or only 2.8 acres more than the average recorded for all Quebec farms in the 1951 census. The degree of closeness of the sample and of the census averages is further emphasized by the fact that the sample did not include any farm with less than 25 acres.

Tillable Land.—A little more than one-fourth of the farms had less than 50 acres of tillable land and more than one-third had from 50 to 74 acres (Table 2). Thus, about two-thirds of the owners started farming with less than 75 acres of tillable land.

About half of the farm owners had not added to or reduced their acreage in tillable land after they had acquired their farms, two-fifths had increased it and only about four per cent reported a reduction in acreage at the time of survey. Sixty per cent of the owners who had the same tillable acreage and seventy per cent of

¹ *The Economic Annalist*, October, 1952, pp. 112-115.

**Table 2.—Acreage of Tillable Land at Time of Acquisition and at Time of Survey,
628 Quebec Farms, 1950**

Size of Farm	Farms Reporting		Farms Reporting							
			No Change		Increased Acreage			Decreased Acreage		
					Number of Farms	Original Acreage	Acreage in 1950	Number of Farms	Original Acreage	Acreage in 1950
acres	No.	per cent	No.	acres	No.	acres	acres	No.	acres	acres
Less than 50...	181	28.8	65	37.5	115	35.8	71.6	1	40.0	33.8
50- 74.....	230	36.6	125	60.1	98	60.6	94.4	7	61.4	41.4
75- 99.....	134	21.3	85	84.1	36	84.0	120.0	13	82.3	68.9
100-124.....	50	8.0	35	105.0	13	106.3	140.3	2	104.7	95.1
125 and over...	33	5.3	23	150.8	7	147.2	237.4	3	198.8	81.3
Totals and averages..	628	100.0	333	72.8	269	56.9	92.9	26	90.2	63.5

those who had increased it had less than 75 tillable acres in 1950. The average acreage of tillable land, for all farms, was 66.7 acres at the beginning and 81 acres in 1950.

Many of the owners who started farming on small farm units had not added to their acreage. Their farms have thus become too small for efficient dairy and livestock farming under present-day conditions and do not lend themselves to the use of expensive modern machinery and equipment. Nevertheless, many of them are well adapted to a more intensive type of farm business—to the fruit, vegetable, tobacco, poultry and beekeeping enterprises.

When planning to enlarge his farm a farmer must consider the availability of suitable quality land, the convenience of its location, his own financial resources and his family labour supply. In Quebec the usual way of enlarging a farm consists in buying another complete farm unit rather than in buying only an additional parcel of land. Unfortunately, there are few farms for sale in the good farming areas and when such a farm becomes available it is not usually adjacent or close to that of the would-be purchaser.

Assuming that a farm owner can finance the purchase of an additional farm and that he has the labour supply to operate a larger unit, he would probably buy a neighbour's farm but not one located a few miles away, unless he anticipates establishing one of his sons there. In such a case the two farms might be operated as one farm unit for a time but would eventually revert to their original status as two independent farm units.

Small and medium-size farms offer the best opportunity to the prospective owner with limited financial resources. He may even find it more advantageous, especially in the early stages of his ownership of a farm, to increase his size of business by intensifying production rather than by purchasing an additional parcel of land.

**Table 3.—Investment per Farm and per Acre at Time of Acquisition and at Time of Survey,
560 Quebec Farms**

Period of Acquisition	Farms Reporting	Average per Farm				Size of Farm	Average per Acre	
		Land and Buildings	Machinery and Equipment	Livestock	Total Investment		Land and Buildings	Total Investment
	No.	\$	\$	\$	\$	Acres	\$	\$
Before 1915.....	38	2,965	443	450	3,858	98.7	30.04	39.09
1915-1929.....	166	5,063	910	932	6,905	101.7	49.78	67.89
1930-1939.....	169	4,090	908	838	5,836	115.2	35.50	50.66
1940-1950.....	187	5,324	1,190	1,280	7,794	116.2	45.82	75.68
All farms, 1950....	560	8,631	2,403	2,459	13,493	127.4	68.00	105.12

Values of Farms at Time of Acquisition.—The time at which a person starts a business, whether it be farming or any other type of business, exerts a considerable influence on eventual financial success. A farmer who buys a farm at the end of a period of rising prices usually finds it more difficult to pay for it and achieve ownership than one who buys at the end of a period of falling prices.

For the purpose of recording the changes in farm values between the time of acquisition by present owners and 1950, the years covered in this study (1900-1950) were divided into four distinct economic periods:

1. The 1900-14 period, marked by relatively low but gradually and slightly rising prices.

2. The 1915-29 period which includes six years of considerably rising prices which reached a peak in 1920 when the general wholesale price index climbed to 203.2 from 85.4 in 1914 (1935-39=100). The index declined to 126.8 in 1922 and fluctuated around that level up to 1929.

3. The 1930-39 period was characterized by falling prices when the general wholesale price level reached a low of 86.9 in 1932, then increased from 87.4 in 1933 to 107.8 in 1937, and declined to 99.2 in 1939. Agricultural prices also declined to very low levels during this period.

4. The 1940-50 period during which prices rose continuously. Between 1949 and 1950 they reached a peak as high as that prevailing in 1920, and in 1951 they established a new high.

About seven per cent of the owners included in the study acquired their farms before 1915, thirty per cent during the 1915-29 period, thirty per cent during the 1930-39 period and thirty-three per cent during the 1940-50 period.

Table 4.—Range in Real Estate Values at Time of Acquisition and Percentage Distribution, 560 Quebec Farms

Value	Percentage Distribution of Farms Acquired			
	Before 1915	1915-29	1930-39	1940-50
	—per cent—			
Under \$5,000.....	81.6	48.2	67.4	51.3
\$ 5,000- 7,999.....	13.1	34.3	19.5	27.3
8,000-10,999.....	5.3	15.7	10.7	15.5
11,000-13,999.....		0.6	1.8	2.1
14,000-16,999.....		1.2	0.6	2.7
17,000 and over.....				1.1
Total.....	100.0	100.0	100.0	100.0

The data presented in Table 3 indicate a great variation in the average values of farm real estate (land and buildings), machinery and livestock in each of the four periods described above.

The average real estate value of the farms acquired during the 1915-29 period was 70.8 per cent higher than that recorded for the period prior to 1915; it declined by about 20 per cent in the 1930-39 period and again increased by 23.3 per cent in the 1940-50 period. In 1950-51, farm real estate values were a little higher than the 1919-20 peak reached during the first World War. The variations in farm real estate values were closely associated with changes in general price levels during these periods.

This review of the changes in farm values which occurred during the last fifty years shows that the amount of capital needed to acquire a farm, machinery and livestock has increased considerably during the 1940-50 period. This rise is due mainly to the increase in farm income levels and the inflationary trends of that decade. Indeed, the increase in farm income during that period was much greater than the increase in farm investment. According to the Dominion Bureau of Statistics the aggregate net income of Quebec farm operators increased from \$89,849,000 in 1939 to \$337,578,000 in 1951.

Table 5.—Percentage Distribution of Farms According to Value of Machinery and Livestock at Time of Acquisition, 560 Quebec Farms

Value	Machinery and Equipment				Livestock			
	Farms Acquired				Farms Acquired			
	Before 1915	1915-29	1930-39	1940-50	Before 1915	1915-29	1930-39	1940-50
	—per cent of farms—				—per cent of farms—			
Under \$500.....	54.2	23.3	22.2	19.1	40.0	25.0	26.5	10.0
\$500- 999.....	41.8	35.0	27.0	25.2	36.7	34.5	29.2	25.9
\$1,000-1,499.....	4.0	22.2	29.3	23.5	23.3	24.1	27.4	31.7
\$1,500-1,999.....		6.8	9.5	10.4		6.0	8.8	9.2
\$2,000-2,499.....		10.7	10.3	12.2		5.2	8.1	16.6
\$2,500 and over....		2.0	1.7	9.6		5.2		6.6
Total.....	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Farm Real Estate Values.—The data on changes in farm real estate values presented in Table 3 are supplemented in Table 4 by data indicating the distribution of farms according to the time of acquisition.

The average value of both machinery and livestock increased proportionally more than that of real estate. For the 1915-29 period the average value of machinery and livestock per farm at the time of farm acquisition was more than double that recorded for the period before 1915; it remained about the same during the 1930-39 period but for the 1940-50 period it was almost three times as high as for the period before 1915. The increase in value of machinery and equipment was associated with changes in general price levels and an increase in farm mechanization.

The data presented in Table 5 indicate that during the 1940-50 period there was a higher percentage of farm owners with an investment in machinery and equipment exceeding \$1,500, and as large an investment in livestock when they started operating their farms on their own, than during any previous period. In fact many Quebec farmers now become owners with an investment in machinery and livestock ranging from \$8,000 to \$10,000.

In each of the four periods the value of the investment in machinery was about equal to that of the investment in livestock and each of these two types of investment represented about the same proportion of the total farm investment. The proportion of the total farm investment which the investment in machinery and livestock represented steadily increased from 1915 to 1950 (Table 6).

The total investment per farm in real estate, machinery and livestock of farmers who became owners during the 1940-50 period was more than double that of those who acquired ownership in the period prior to 1915, thirteen per cent higher than for those who did so during the 1915-29 period and 33.5 per cent higher than for the farm owners in the 1930-39 period.

Table 6.—Proportion of Total Farm Investment in Land and Buildings, Equipment and Livestock at Time of Acquisition and in 1950, 560 Quebec Farms

	Per cent of Total Investment				
	Farms Acquired				All Farms 1950
	Before 1915	1915-29	1930-39	1940-50	
Land and Buildings.....	76.8	73.3	70.1	68.3	64.0
Machinery and Equipment.....	11.5	13.2	15.5	15.3	17.8
Livestock.....	11.7	13.5	14.4	16.4	18.2
Total.....	100.0	100.0	100.0	100.0	100.0

FEEDER CATTLE—A COMPARISON OF RECENT PRICE RELATIONSHIPS IN CANADA AND THE UNITED STATES

M. RACHLIS

When a buyer purchases feeder cattle in the fall for re-sale the following year, he realizes that he is running the risk of a loss. The feeder cattle business contains a strong speculative element but looks attractive to many people because returns are generally high when future prices fall in line with the buyer's forecasts. Since the end of the war buyers of feeder cattle have secured good returns on their cattle business, prices having risen steadily since 1946 (Table 1).

In the postwar years, 1946-51, feeders realized good profits not only on the gain in weight during the feeding period but also on the original weight of the animal. In 1950, for example, good feeder steers weighing 750 pounds would have cost an average of \$184.20 at Winnipeg. In the following year if these steers had gained 200 pounds in weight and graded Choice they would have brought an average of \$317.49 per steer. This gross gain amounts to \$133.29 for a single animal and would leave a sizable net return after deduction of all costs. The estimate given above would apply in a varying degree to all the postwar years, as a glance at Table 1 will indicate.

In Canada the fattening of cattle is a specialized enterprise confined mainly to certain areas within the provinces of Alberta and Ontario. In Alberta the central portion of the province and the Lethbridge area are the major feeding regions.

Table 1.—Feeding Margin: Difference Between the Annual Average Price at Winnipeg of Choice Steers up to 1,000 Pounds and Good Feeder Steers the Preceding Year, 1946-51

Year	Choice Steers up to 1,000 pounds	Good Feeder Steers In Pre- ceding Year	Feeding Margin, Column 1 minus Column 2
	—dollars per cwt. alive—		
1946.....	13.30	8.85	4.45
1947.....	14.99	10.20	4.79
1948.....	19.05	10.95	8.10
1949.....	21.85	17.91	3.94
1950.....	26.39	17.46	8.93
1951.....	33.42	24.56	8.86
1952.....		30.45	.....

In Ontario the feeder cattle area is concentrated along the western shore of Lake Huron, from Georgian Bay in the north to Kent county in the south. The relative importance of the movement of cattle back to feed lots in the various provinces is illustrated by the distribution in 1951. In that year Alberta and Ontario absorbed 84 per cent of all the feeders marketed through stockyards.

Prices of feeders tend to vary with prices of slaughter cattle, but expectations as to future prices play an important role in determining the price relationship at any given time. At Winnipeg, between 1946 and 1951, prices of good stockers and feeders averaged \$1.45 less than prices of good light steers. Expectations of continuing high prices for beef cattle in recent years are illustrated by the fact that, both in 1950 and 1951, the yearly weighted average prices of good feeder steers, at Toronto, were higher than the price of good slaughter steers. This suggests a strong element of speculation.

People who bought feeder cattle at the unusually high prices prevailing in 1951 faced a declining market in 1952. Because the fall in cattle prices occurred around the beginning of 1952, there has been a tendency to associate this decline with the outbreak of foot-and-mouth disease in Saskatchewan. The decline in Canadian feeder cattle prices, however, was not entirely attributable to the occurrence of foot-and-mouth disease and the consequent closing of the United States border to Canadian cattle.

Table 2 presents comparative figures on United States and Canadian prices of feeder cattle over a number of years during which there was a free movement of cattle across the border. From these figures, it seems that before the war a difference

in price of about \$2.60 a hundredweight for live cattle between the South St. Paul and Winnipeg markets was needed to induce the movement of cattle to the United States. Since 1949 the annual average spread between the two markets has varied from \$2.83 to \$3.44 per hundredweight, alive.

The main costs of bringing feeder cattle from Winnipeg to St. Paul include buying charges, freight and customs duties. The buying charge is 25 cents a hundredweight; duties in 1951 averaged about \$1.87 a hundredweight¹; freight charges which were about 66 cents a hundred pounds in 1951 have now reached a 76-cent level. Some allowance should also be made for the profit realized in moving cattle from Winnipeg to St. Paul. A minimum margin of about \$3.00 would be required to move feeders from Winnipeg to South St. Paul.

In the last quarter of 1951, as fall marketing increased in volume, prices of feeder cattle declined both in the United States and in Canada. At the South St. Paul stockyards average prices fell from \$32.53 in September 1951 to \$29.83 in February 1952, a drop of \$2.70 a hundredweight in United States funds. Winnipeg prices declined from \$31.61 to \$25.90 in Canadian funds or \$5.71 per hundred pounds (Table 3), and at the time of the foot-and-mouth outbreak feeder steers were selling at Winnipeg for about 96 cents less than their calculated value delivered at South St. Paul.

Table 2.—Comparison of Weighted Average Prices of Stocker and Feeder Steers at South St. Paul, U.S.A., and at Winnipeg, 1936-1951

Year	Price at South St. Paul ^a	Price at Winnipeg ^b	Difference, St. Paul Minus Winnipeg	Exports of Cattle to the U.S.A.
	—Canadian dollars per cwt. alive—			thousand head
1936.....	5.66	3.27	2.39	191
1937.....	7.15	4.33	2.82	208
1938.....	7.09	4.31	2.78	98
1939.....	8.05	5.45	2.60	201
1940.....	8.56	6.13	2.43	154
1941.....	9.82	7.10	2.72	190
1936-41 Average.....	7.72	5.10	2.62	174
1942-48 ^c				
1949.....	20.52	17.46	3.06	386
1950.....	28.00	24.56	3.44	432
1951.....	33.28 ^d	30.45	2.83 ^d	226

^a Average for all weights and grades.

^b Good stocker and feeder steers.

^c Canadian embargo on exports.

^d Preliminary.

St. Paul prices declined by \$6.85 (U.S.) and Winnipeg prices by \$8.31 (Can.) a hundredweight between February and November. In terms of United States dollars the St. Paul price had declined by \$9.55 between September 1951 and November 1952 compared with \$14.02 (Can.) for the Winnipeg price. Thus, the Winnipeg prices declined by \$2.15 a hundredweight more than the South St. Paul prices between September 1951 and November 1952. The drop in prices was approximately equal in the two markets after the imposition of the United States embargo on Canadian cattle.

The question now arises, as to how far Winnipeg prices might have declined had there been no obstacle to the shipment of cattle to the United States.

During most of 1951 the United States buyers had the advantage of a favourable rate of exchange of about five cents on the dollar. A United States buyer would have calculated his costs roughly as follows: buying charge, 25 cents; duty, \$1.50; and freight, 66 cents—or a total of \$2.41. His buying and freight charges could be paid in Canadian funds and this would reduce his cost to \$2.37. On the basis of the average price of \$32.53 at St. Paul in September, he would have paid up to \$30.16 in United States money for feeders at Winnipeg. At that time this \$30.16

¹ The rate of duty in 1951 was \$2.50 per hundredweight for cattle 200-699 lbs. and \$1.50 for all others.

represented \$31.84 in Canadian funds. The Winnipeg price then was \$31.61 and the United States buyer made a profit of 23 Canadian or 22 United States cents per hundredweight.

Between September 1951 and August 1952 the relationship between Canadian and United States currencies changed appreciably. The increased value of the Canadian dollar represented an additional cost item to United States buyers and a more favourable margin between Winnipeg and St. Paul prices would have been required in August 1952 to induce imports of Canadian cattle into the United States. In addition, the 15 per cent rise in the freight rate in that interval added a further 10 cents a hundredweight to a United States buyer's costs and this charge would also have had to be deducted from the price he would have been willing to pay on the Winnipeg stockyards.

Table 3.—Comparison of South St. Paul, U.S.A., and Winnipeg Prices of Feeder Cattle, by Months, June 1951 to August 1952

	Price at South St. Paul Good Feeder Steers (Col. 1)	Price at Winnipeg Good Feeder Steers (Col. 2)	Difference: Column 1 Minus Column 2
—Canadian dollars per cwt. alive—			
1951			
June.....	34.52	31.66	2.86
July.....	33.37	31.00	2.37
August.....	33.10	30.70	2.40
September.....	34.34	31.61	2.73
October.....	34.64	30.16	4.48
November.....	32.96	29.04	3.92
December.....	31.29	28.75	2.54
1952			
January.....	30.00	27.10	2.90
February.....	29.86	25.90	3.96
March.....	28.58	a	.....
April.....	27.86	a	.....
May.....	29.09	a	.....
June.....	27.73	21.00	6.73
July.....	25.12	22.09	3.03
August.....	24.14	22.20	1.94
September.....	23.21	19.68	3.53
October.....	22.53	16.39	6.14
November.....	22.47	17.59	4.88

a No trading in feeder cattle owing to foot-and-mouth disease.

It is thus apparent that the major part of the decline in Canadian feeder cattle prices would have occurred even if there had been no outbreak of foot-and-mouth disease in Canada in 1952. The total decline in the Winnipeg price amounted to \$8.31 a hundredweight from February to November. In this period St. Paul prices declined by \$7.39 (Can.) leaving only 92 cents unaccounted for, ten cents of which may be attributed to the rise in freight rates.

Therefore it seems reasonable to conclude that Canadians who bought feeder cattle at the record prices of 1951 would have been about as badly off in 1952 had there been no occurrence of foot-and-mouth disease and no resultant United States embargo on shipments of Canadian cattle to the United States.

In this respect, United States buyers of feeder cattle have been in much the same position as Canadians. The only difference between the positions of Canadian and United States feeders was that the improvement in the Canadian rate of exchange in 1952 represented an additional price to Canadians.

The outlook for the next few months is for a further easing of United States prices for cattle. At the present time,¹ the relationship between Canadian and United States prices is about \$2.00 a hundredweight below that which prevailed before the imposition of the United States embargo.

¹ November 1952.

It seems probable that Canadian prices will change little in the next few months and a price decline of from five to ten per cent is forecast for the United States. If the United States forecast proves correct, feeder cattle at South St. Paul will be about \$22.00 a hundredweight in the next few months. At the same time the Canadian dollar is likely to approach parity. If \$3.00 is allowed for charges it would mean a price of between \$17.00 and \$19.00 a hundredweight for feeder cattle at Winnipeg at March 1, 1953.

GOVERNMENT MEASURES AFFECTING AGRICULTURE

V. H. MATTE

The federal and provincial departments of Agriculture administer all types of legislation affecting Canadian agriculture, with only a few exceptions such as legislation relating to land policies and the marketing of grain. These departments are established by statute and their main function is the direction of agriculture within their own fields of jurisdiction. In Newfoundland, where agriculture is a minor industry, the Department of Mines and Resources administers all laws relating to agriculture and to crown lands and surveying.

In this article the various Acts have been classified according to purpose and the headings indicate the main functions of the legislation dealt with in each section.

Production.—Under the Live Stock Pedigree Act, the federal government has provided for the incorporation of pure-bred live stock record associations and for the establishment of the Canadian National Live Stock Record Board. The main purpose of this Board is to keep livestock records and issue certificates of registration and of transfer. Another contribution of the federal government in the field of livestock improvement is the Dominion Poultry Improvement Programme established under the Live Stock and Live Stock Products Act. The purpose of the Programme is the eradication of poultry diseases and the improvement of poultry stock in Canada.

Provincial policies directed towards improvement of the livestock industry include the following:

- (a) In all provinces the annual enrollment of stallions with the provincial department of agriculture has been made compulsory to ensure the collection of service fees.
- (b) In British Columbia, to collect service fees, all male livestock must be registered with the provincial Department of Agriculture.
- (c) In Nova Scotia, Ontario, Manitoba and Alberta, legislation provides for the formation of pure-bred sire areas in which all sires used for breeding purposes must be pure-bred.
- (d) Legislation requiring the licensing of artificial insemination centres, prescribing the qualifications of technicians, and establishing an Artificial Insemination Board has been passed in Ontario and New Brunswick.
- (e) Prince Edward Island and Nova Scotia have policies for the eradication of poultry diseases and the improvement of poultry stock.
- (f) The Manitoba and Saskatchewan governments promote the development of the livestock industry by purchasing or raising livestock which they sell or rent to farmers.
- (g) In Manitoba, Saskatchewan, Alberta and British Columbia, the sum of \$2.00 per head is deducted from the purchase price of cattle with horns. The money thus collected is used for the improvement of livestock in those provinces.
- (h) In British Columbia, 30 cents are deducted from the purchase price of bulls, steers or females of the bovine species other than a cow for slaughter, bought by packers, and from the purchase price of such stock when shipped for slaughter outside the province. The money collected is used by beef cattle associations for promotion of the beef cattle industry.

The federal Animal Contagious Diseases Act was passed to control the spread and facilitate the eradication of contagious or infectious animal diseases. It provides for the quarantine and slaughter of affected animals and for the payment of compensation to the owners of the slaughtered animals. The 1952 outbreak of foot-and-mouth disease led to the passage of "An Act for the Control and Extirpation of Foot-and-Mouth Disease" which empowered the Minister of Agriculture to order the slaughter of any animal to prevent the spread of the disease. In addition to any compensation paid under the Animal Contagious Diseases Act, provision was made for further compensation to owners of animals slaughtered because of foot-and-mouth disease so that the total compensation would more nearly approximate the real value of the animal.

British Columbia, Alberta, Saskatchewan and Quebec have legislation similar to the federal Animal Contagious Diseases Act. Manitoba, New Brunswick and Prince Edward Island have legislation for the control and eradication of Bang's disease and a New Brunswick statute forbids the sale of cattle affected with tuberculosis. Ontario

and New Brunswick provide for the establishment of warble-fly-free areas in which measures are taken to eradicate warble fly infestation. Related to this problem of health of animals is the quality and type of veterinary services available to farmers. Saskatchewan, Manitoba, Nova Scotia and Prince Edward Island have legislation which enables veterinarians to practise at uniform fees, within their respective provinces, and which provides for financial assistance to veterinarians when necessary. The incorporation of associations of veterinary surgeons is provided for by legislation in the provinces of British Columbia, Alberta, Ontario, Quebec and Nova Scotia.

Three federal Acts are designed to protect livestock against injury. The Live Stock Shipping Act relates to the health, security and safe carriage of livestock on ships. The Railway Act provides that a railway company construct crossings on farm land traversed by its railway, fences on each side of the railway where necessary, and cattle guards at every highway crossing at rail level. The Criminal Code contains penalties for persons who attempt to kill, maim, poison or injure livestock and sets out the requirements for feeding and resting livestock in transit and the care and sanitary precautions to be taken by railway and steamship companies.

The procedure to be followed on finding an injured animal is established by statute in Ontario, Manitoba and Saskatchewan. And the legislation of Ontario, Manitoba, Saskatchewan and Alberta includes a special procedure for advising an owner that his animal has been killed or injured by a railway train.

All the provinces have legislation dealing with the protection of livestock against dogs.

In all provinces legislation sets restrictions on animals running at large, and provides for compensation for any damage done by these animals and for impounding such animals. All provinces except Quebec, Prince Edward Island and Newfoundland provide for the allotting of brands for livestock by their departments of agriculture.

In British Columbia regulations concerning the production of milk are included in the Milk Act, an Act which deals specifically with the grading of dairy farms, and the inspection of cattle, premises and milking methods.

The provinces of British Columbia, Alberta, New Brunswick and Nova Scotia have legislation providing for the formation of seed-control areas in which only prescribed varieties of seeds may be grown. In Saskatchewan, areas may be designated in which only specified varieties of forage crop seeds may be sown, and in Prince Edward Island special areas may be proclaimed in which the growing of field-root seeds of a variety other than that for which the area was proclaimed, is prohibited. Alberta and Saskatchewan have legislation which empowers their respective governments to purchase grain to build up adequate seed supplies for farmers in deficit areas and also, in Saskatchewan, for the maintenance of livestock in periods of unusually low crop yields. Alberta has an Act dealing with the conservation of straw for fodder purposes and, more specifically, with the establishment of straw conservation areas in which the destruction of threshed straw is forbidden until four years after the straw was threshed unless authority to do otherwise is granted by the field crops commissioner.

Nova Scotia is the only province which has legislation affecting fruit production. To encourage the cultivation of blueberries this legislation authorizes the setting aside of Crown Lands as blueberry commons upon the application of a blueberry picking association. Another Act authorizes the berry committees in certain municipalities to proclaim closed seasons for the protection of cranberries, foxberries and blueberries. The Apple Maggot Control Board of Nova Scotia is authorized to make regulations for the control or eradication of the apple maggot and to prevent its introduction into or dissemination in the province.

Ontario and British Columbia have legislation providing for the establishment of seed potato control areas where only authorized varieties may be grown. New Brunswick and Nova Scotia provide for the establishment of certified foundation seed areas and certified seed areas with special regulations governing the planting, growing, digging, storing and transportation of potatoes. The whole of Prince Edward Island has been constituted a certified seed area for the production of potatoes and only seeds of the classes Foundation, Foundation "A", or Certified may be planted. Ontario, New Brunswick, Nova Scotia and Prince Edward Island have legislation dealing with the precautionary measures to be taken to prevent the introduction and spread of any insect, pest or disease injurious to potatoes.

The principal aim of the federal government's Destructive Insect and Pest Act is to prevent the entry into Canada and the spread of insects, pests and diseases which attack vegetation. For the purpose of regulating the sale of products used in controlling agricultural pests, the registration of all brands of pest control products manufactured, imported, or sold in Canada is made compulsory under the Pest Control Products Act.

All provinces have legislation similar to the federal Destructive Insect and Pest Act, designed to prevent the spread within their borders of insects, pests and diseases destructive to vegetation. British Columbia and Alberta also provide assistance to farmers in controlling grasshoppers. Legislation to prevent the spread of noxious weeds is in effect in all provinces except New Brunswick and Nova Scotia.

The sale of fertilizers is regulated by the federal government's Fertilizers Act which requires the registration with the Department of Agriculture of all fertilizers except the commercially pure fertilizers named in the Act; standards for all fertilizers sold in Canada have been established under this Act.

All provinces have legislation permitting farmers to shoot game in order to protect their crops or their livestock.

Land Policies.—Federal participation in the field of land drainage and irrigation is authorized under two separate Acts. The Prairie Farm Rehabilitation Act provides for the rehabilitation of drought and soil drifting areas in Manitoba, Saskatchewan and Alberta, and the Maritime Marshland Rehabilitation Act for the reclamation and development of marshlands in Nova Scotia, New Brunswick and Prince Edward Island. These three provinces have passed enabling legislation authorizing their governments to assume up to one-half of the cost of marshland reclamation in their respective provinces. All other provinces except Ontario and Newfoundland have legislation enabling them to enter into agreements with the federal government and to pay part of the costs of irrigation or drainage projects.

All provinces have legislation empowering them to assist municipalities undertaking land drainage or irrigation projects. The provinces of Alberta, Saskatchewan, Ontario, Quebec and Nova Scotia supply assistance to farmers for the construction and maintenance of small drainage ditches. In the Maritime Provinces and in Ontario government loans are granted to farmers for the construction of tile, stone or timber drains on their land. The three Prairie Provinces have legislation designed to encourage those methods of cultivation which have been found most suitable for the control of soil drifting.

Under the Public Lands Grants Act and the Territorial Lands Act, the federal government provides for the sale, lease or other disposition of public lands and of lands in the Yukon and Northwest Territories for agricultural and other purposes. Loans up to a maximum of \$6,000 are made by the federal government under the Veterans' Land Act to veterans of World War II who settle upon the land.

Provincial lands are available for agricultural settlement in all provinces and special assistance is given to settlers in Quebec and in the northern parts of Alberta, Saskatchewan and Ontario. In British Columbia, Alberta, Quebec and Newfoundland the governments are authorized to clear and break land for agricultural use. Ontario, Quebec, New Brunswick, Nova Scotia, Prince Edward Island and Newfoundland grant farm loans to settlers. British Columbia, Saskatchewan and Newfoundland have been authorized by their respective governments to enter into agreements with the federal government for the settlement of veterans on provincial lands, pursuant to the provisions of the federal Veterans' Land Act. In British Columbia and Ontario grants of public lands, not exceeding 160 acres, may be made to veterans.

The federal Land Titles Act provides for the registration of titles to land located in the Northwest Territories and in the Yukon. All the provinces have legislation providing for the formation of registration districts for the registration of titles to land.

Farm Credit Facilities and Government Relief Assistance.—The Canadian Farm Loan Act was passed by the federal government to establish a system of long term mortgage credit for farmers. First mortgage loans may be made up to 60 per cent of the value of the farm land and buildings but the maximum loan is \$10,000. When a second mortgage loan is made under the Act, the aggregate of the loans may not exceed \$12,000 to any one borrower.

A system of intermediate and short term credit for the improvement and development of farms was established by the federal government under the Farm

Improvement Loans Act. The Act provides that the Minister of Finance will pay to any bank the amount of loss sustained by it as a result of a farm improvement loan if the loan did not exceed \$3,000. The National Housing Act empowers the Central Mortgage and Housing Corporation to enter into contracts with approved lending institutions for the making of joint loans, up to a maximum of \$8,000, to assist in the construction of farm houses.

The federal government's Farmer's Creditors Arrangement Act facilitates compromises and arrangements between insolvent farmers and their creditors and simplifies the operation of the Bankruptcy Act with respect to farmers generally. In the field of crop insurance, the federal government, under the Prairie Farm Assistance Act makes cash payments to farmers in years of crop failure in the three Prairie Provinces and in the Peace River District of British Columbia. Wheat, oats, barley and rye are the crops eligible for crop failure payments.

Among the provinces, Quebec, Ontario, Manitoba and Saskatchewan have legislation providing for loans to farmers for the improvement and development of their farms. In addition, Ontario has an Act which provides for the incorporation of farm loan associations whose object is to promote individual prosperity and agricultural development by making short term loans to their members for current expenditures. All provinces except British Columbia, New Brunswick, Prince Edward Island and Newfoundland have legislation to assist municipalities in furnishing relief to necessitous farmers in the form of advances of seed grain, fodder, feed grain, etc. Saskatchewan and Alberta have legislation concerning arrangements for the cancellation of municipal debts to the provincial government for notes guaranteed for advances of seed grain and relief.

The priority of liens on farm property which have been secured for loans of various sorts is established by provincial legislation.

Marketing of Farm Products.—(a) **General.**—Under the Agricultural Products Marketing Act, the federal government authorizes any agricultural products marketing board established under a provincial statute to exercise, in interprovincial and export trade, all powers similar to those which such a board may exercise for the marketing of agricultural products within the province. All provinces have enabling legislation which authorizes provincial boards to perform any function conferred on them by a federal act dealing with the marketing of an agricultural product.

The Agricultural Prices Support Act, passed by the federal government in 1944, provided for the creation of an Agricultural Prices Support Board with authority to introduce measures which would ensure fair and reasonable returns to farmers for their products. The Agricultural Products Board, created under the Agricultural Products Board Act, has the power to purchase, sell, deliver, import, export, store, transfer or process agricultural products on behalf of the federal government and, when requested under the provisions of the Agricultural Prices Support Act, may undertake the purchase and disposition of agricultural products for the purposes of that Act.

In order to assist and encourage the co-operative marketing of agricultural products the federal government, under the Agricultural Products Co-operative Marketing Act, guarantees the initial payments to producers on products sold under a co-operative plan.

The federal government's Meat and Canned Foods Act, provides for the inspection of all meats and canned foods entering interprovincial and export trade. The Foods and Drugs Act establishes standards of quality, purity and wholesomeness for foods and drugs sold in Canada.

Under the Cold Storage Act the federal government may grant subsidies not exceeding 33½ per cent of the amount expended towards the construction and equipment of cold storage warehouses in Canada.

The Inspection and Sale Act regulates the inspection and sale of binder twine in Canada and establishes bushel weights for certain commodities sold by the bushel.

In all provinces there is legislation providing for the formation of a provincial marketing board to regulate the transportation, packing, storage and marketing of agricultural products within the province, and for the establishment of marketing schemes to regulate the marketing of one or more agricultural products in the whole or any part of a province. Ontario, Quebec, New Brunswick and Nova Scotia also have additional legislation regulating the grading, packing, inspection and sale of agricultural products within their borders. Quebec is the only province which has legislation prescribing standards for canned foods and Nova Scotia the only province

which provides assistance in the establishment of cold storage plants. Nova Scotia legislation authorizes the incorporation of farmers' fruit, produce and warehouse associations to buy, sell and deal in farm produce and all kinds of farm supplies.

(b) **Commodities.—Livestock and livestock products.**—The Live Stock and Live Stock Products Act authorizes the federal government to make regulations governing the operation of stockyards, and the inspection, grading, packing, transporting and labelling of livestock and livestock products produced within or imported into Canada. British Columbia, Saskatchewan, New Brunswick and Prince Edward Island have enabling acts which provide for the adoption within those provinces of the provisions of the federal Live Stock and Live Stock Products Act. All provinces except Quebec, Nova Scotia, Prince Edward Island and Newfoundland have legislation, separate from the general marketing acts, which regulates the marketing of livestock and livestock products and which authorizes inspectors of the federal Department of Agriculture to be official inspectors under the provincial Acts. British Columbia has separate Acts regulating the grading and marketing of beef, hogs, and wool.

Dairy Products.—Under the Canada Dairy Products Act the federal government has provided for the establishment of national standards for dairy products and the regulation of interprovincial and international trade in these products. Under the Milk Test Act the federal government regulates the testing and marking for accuracy of glassware used to test milk and cream. The Cheese and Cheese Factory Improvement Act authorizes the federal government to grant subsidies for the construction, reconstruction and equipping of cheese factories and to pay premiums on high quality cheese.

All provinces have legislation regulating the manufacture, processing and marketing of dairy products within their boundaries. The manufacture and sale of margarine is prohibited in Quebec and Prince Edward Island and is subject to governmental regulation in all other provinces.

Poultry and Eggs.—Under the Live Stock and Live Stock Products Act the federal government regulates the inspection, grading, packing, labelling and transportation of dressed poultry and eggs produced within or imported into Canada. All provinces have legislation similar to that of the federal government to regulate the marketing of poultry and eggs within their borders.

Fruit, Vegetables, Honey and Maple Products.—Under the Fruit, Vegetables and Honey Act, the federal government regulates the marketing of these products, whether produced in or imported into Canada. Regulations relating to the manufacture, inspection and sale of maple products are established by the federal government under the Maple Products Industry Act.

British Columbia and Prince Edward Island have legislation regulating the grading and sale of fruit, vegetables and honey within their borders; Saskatchewan legislation covers vegetables and honey; and Alberta, Manitoba and Newfoundland legislation deals only with vegetables. In the other provinces these products are dealt with in the general marketing Acts.

Grains and Feeds.—The Canadian Wheat Board was incorporated under the Canadian Wheat Board Act to market, in interprovincial and export trade, wheat, oats, barley, rye and flaxseed. The Board of Grain Commissioners for Canada established under the Canada Grain Act is responsible for the handling of grain and for the establishment every year, of grades for the various kinds of grain. The Grain Futures Act provides for the supervision and regulation of trading in grain futures. The sale of feeding stuffs is controlled and regulated by the federal government under the Feeding Stuffs Act. The inspection and grading of hay and straw is carried out under the Hay and Straw Inspection Act.

Alberta has legislation authorizing the adoption in that province of the provisions of any federal statute which affects the marketing of oats and barley. Saskatchewan has legislation which stipulates that, with the exception of livestock or poultry producers, the Canadian Wheat Board shall be the sole buyer of grain produced in the province for delivery within the province. Alberta and Manitoba have similar legislation with respect to oats and barley. An Ontario Act requires that all grain brought into that province be clean and free from weed seeds. In Manitoba all grain dealers must be licensed, and Alberta has an Act which requires that all grain buyers in the province must be licensed under the federal Canada Grain Act.

Seeds.—Under the Seeds Act the federal government regulates the testing, inspection and sale of seeds in Canada. Manitoba has legislation which requires that all seed sold in that province must satisfy the provisions of the federal government's Seeds Act.

Special Crops.—In Quebec the preparation and sale of leaf tobacco is regulated by statute.

Agricultural Societies and Agricultural Education.—Experiments and research in agriculture are carried on by the federal Department of Agriculture in accordance with the provisions of the Experimental Farm Stations Act.

All provinces have legislation authorizing the formation of, and providing for financial assistance to agricultural societies for the purpose of encouraging improvements in agriculture, horticulture and arboriculture. Other provincial legislation provides for financial and other assistance to agricultural schools and colleges, the establishment of demonstration farms, and the appointment of agricultural representatives.

Agricultural Co-operation.—There is legislation in all provinces providing for the establishment of many kinds of co-operative associations. These include consumer, production and marketing co-operatives. Alberta and Quebec have legislation authorizing the incorporation of rural credit co-operatives to supply intermediate and short term credit to farmer members. The governments of Saskatchewan, Ontario and Newfoundland are authorized to make loans to co-operative associations, and other provinces have legislation authorizing government guarantees for the payment of money borrowed by co-operative associations.

Credit Unions.—All provinces have legislation authorizing the incorporation of credit union societies to provide a source of credit for members.

Rural Electrification.—To make electrical power available in sparsely settled rural areas, British Columbia, Manitoba, Ontario, Quebec and Nova Scotia have legislation authorizing their respective governments to pay part of the cost of supplying those areas with electricity. The provincial governments of Ontario and Quebec are authorized to make loans, through the provincial power commission, to owners of land in rural power districts for the installation of electricity on farms.

Transportation.—Under authority of the federal government's Railway Act, rates on western grain and flour moving east to Fort William and Port Arthur, west to Vancouver and other Pacific ports for export, and north to Churchill for export are at the same level as those established under the Crow's Nest Pass Act of 1897. Agricultural products of the Maritimes moving to Canadian and overseas markets benefit from the Maritime Freight Rates Act of 1927. Together with Crow's Nest Pass rates, this Act is a principal statutory rate provision of a regional character in the national transportation policy. It provided for a 20 per cent reduction in rates on rail freight 1) moving within the Maritime Provinces and eastern Quebec; 2) moving outward from such Eastern lines westward to points in Canada; and 3) moving from points on Eastern lines to Maritime ports for export overseas. The Act allows rates on preferred traffic to be varied with other rates to meet increases or reductions in cost of railway operations, provided that the 20 per cent preference is maintained. The Act has also been made applicable to the Newfoundland Railway including the steamship service connecting it to Nova Scotia.

Taxation.—Special provisions in the Income Tax Act deal with the taxation of co-operatives and with the methods to be used in determining the tax payable on income derived from farming.

International Relations.—Although the Parliament of Canada has not yet ratified the General Agreement on Tariffs and Trade signed at Geneva in 1947, the principles established in the Agreement have guided Canada's international trade policy. As a result of negotiations conducted under this Agreement, substantial tariff reductions have been given and received in trade in agricultural products. Details of Canada's trade policies are found in the Custom's Tariff Act and in the various federal Acts which ratified her trade agreements with foreign countries.

An Act passed by the federal government in 1945 approves the Constitution of the Food and Agriculture Organization of the United Nations and establishes Canada as a member of FAO. Its Constitution states that FAO was established to promote the common welfare of the member nations by furthering separate and collective action for the purposes of raising levels of nutrition and standards of living of the peoples under their respective jurisdictions, securing improvements in the efficiency of the production and distribution of all food and agricultural products, bettering the condition of rural populations, and thus contributing to an expanding world economy.

PUBLICATIONS OF THE ECONOMICS DIVISION

Provincial Agricultural Legislation in Ontario and Quebec, 1951. Processed bul. Ottawa, September 1952.

This is the third reference paper in a series outlining agricultural legislation in Canada. The paper was prepared by Miss Viviane H. Matte.

The author has classified the various provincial Acts according to purposes and divided them into nine broad groups: administration, production, land policies, marketing, extension and education, farm credit, co-operatives, credit unions, and rural electrification.

Farm Power and Machinery Costs in Alberta, 1950. Scott, H. K. Processed bul. Ottawa, September 1952.

A thirty-page report on a study of the use and the cost of operation of 17 farm machines found on most farms in Alberta. The report ends with a detailed analysis of the comparative costs of typical sequences of field operations.

Demand for Cheese in Selected Canadian Cities. Drayton, L. E. Processed bul. Ottawa, October 1952.

A preliminary report based on data collected during a field survey conducted in 1951. The report deals mainly with monthly per capita consumption and the relative importance of various types of cheese in seven Canadian cities.

Consumption of Food by Farm Households in New Brunswick, 1945-46. Johnston, C. I. and L. E. Drayton. Processed bul. Ottawa, October 1952.

The purpose of this study was to measure the adequacy of the diets of the farm families and to ascertain the extent to which farmers supplied the food requirements of their households. The report provides information on: *Food Consumption of New Brunswick Farm Households, Calorie and Protein Values of Food Consumed, Retail Value of Food Consumed, Variations by Class of Household, Home Produced Food Consumed, and Home Preserved Foods.*

A Methodological Note and Alberta Farm Operators and the Level-of-Living Concept, 1952. Abell, Helen C. and B. A. MacDonald. Processed bul. Ottawa, Oct. 1952.

The first two of a series of short reports on a study of the factors influencing the choice of alternative farm enterprises in two mixed farming areas of Alberta. The Note was prepared by Bruce A. MacDonald and deals with the method of conducting the field work phase of the study. Miss Abell's report deals with the level-of-living ratings which farmers gave their families, communities, province, and Canada as a whole. Her report also includes the results of an objective level-of-living rating determined according to the Edwards' socio-economic status scale.

OTHER PUBLICATIONS

The Canadian Grain Trade 1931-1951. MacGibbon, D. A. Toronto, Univ. of Toronto Press. 1952. pp. ix + 227.

In this book Dr. D. A. MacGibbon traces the developments which have influenced the organization of the Canadian grain trade during the 1931-1951 period. This period was characterized by a shift from free trading on the open market to the regulated marketing of Canadian wheat and other grains through the Canadian Wheat Board, by the growth of the wheat pools, the negotiation of international wheat agreements, the establishment of a permit system to control deliveries of grain to country elevators, and by legislation designed to protect producers against losses arising from the hazards of nature.

The author also devotes a special chapter to *The United Grain Growers Limited* and another to *The independent companies: The Winnipeg Grain Exchange*. A firm believer in freedom of trade he concludes his *Summary and Conclusion* chapter with the remark that: "For the Canadian West the most propitious circumstances for the continuance of its export trade in cereals are those that make for the freest possible international exchange of goods and services".

Planning for Freedom and other essays and addresses. Von Mises, Ludwig. South Holland Ill., Libertarian Press. 1952. pp. vi + 174.

In this collection of essays and addresses Von Mises reveals himself as one of today's leaders among the economists and social scientists who advocate economic freedom as the essential basis of all other human freedoms.

THE ECONOMIC ANNALIST

A BIMONTHLY REVIEW OF AGRICULTURAL BUSINESS

G. P. BOUCHER, Editor

APRIL 1953

Vol. XXIII, No. 2

CONTENTS

	Page
The Economic Situation.....	27
The Influence of Prices on the Relative Consumption of Beef and Pork..... <i>T. G. E. Woollam</i>	29
Choice of Alternative Farm Enterprises..... <i>Helen A. Abell</i>	33
Federal Agricultural Programs Affecting Prices of Farm Products, March 1, 1952 to February 28, 1953. <i>Marjorie R. Cameron</i>	35
Development of Research on Food Consumption by the Economics Division..... <i>L. E. Drayton</i>	40
Recent Freight Rate and Transportation Developments. <i>E. P. Reid</i>	43
FAO in 1952..... <i>S. C. Hudson</i>	46
Publications of the Economics Division.....	48

MARKETING SERVICE, ECONOMICS DIVISION

J. F. BOOTH, Chief

Published by Authority of the Right Honourable James G. Gardiner
Minister of Agriculture

ANNUAL AND MONTHLY INDEX NUMBERS

WHOLESALE PRICES, FARM PRICES AND LIVING COST INDEXES

Year	Wholesale Prices 1935-39=100				Farm Prices of Agricultural Products 1935-39=100 (e)	Commodities and Services used by Farmers 1935-39=100		Cost of Living 1935-39=100		Consumer Price (1949=100) (j)
	(a) General Wholesale Index	(b) Farm Products	(c) Field Products	(d) Animal Products		(f) Equipment & Materials	(g) Eleven Factor Index	(h) Farm Living Costs	(i) Urban Living Costs	
1913.....	83.4					85.4	.....	80.1	79.1	49.2
1914.....	85.4					90.2	85.3	82.3	79.7	49.6
1915.....	91.8					96.9	91.6	86.5	80.7	50.3
1916.....	109.8					101.7	100.5	93.7	87.0	54.2
1917.....	148.9					140.7	140.5	111.5	102.4	63.7
1918.....	166.0					164.1	160.2	131.1	115.6	72.0
1919.....	174.7					169.1	167.9	143.0	126.5	78.8
1920.....	203.2					190.1	186.5	171.3	145.4	90.5
1921.....	143.4					147.4	152.5	139.9	129.9	80.9
1922.....	126.8					124.6	134.1	127.9	120.4	74.9
1923.....	127.7					118.3	130.6	128.3	120.7	75.2
1924.....	129.5					122.3	131.9	125.5	118.8	74.0
1925.....	133.8					123.2	131.8	123.9	119.8	74.6
1926.....	130.3	144.4	158.5	130.2		119.9	130.6	121.1	121.8	75.9
1927.....	127.3	138.6	149.4	127.8		119.9	131.2	119.8	119.9	74.6
1928.....	125.6	136.3	134.3	138.2		118.3	129.3	118.5	120.5	75.0
1929.....	124.6	140.8	137.2	144.4		117.6	127.9	117.3	121.7	75.8
1930.....	112.9	119.5	105.8	133.3		105.6	117.0	113.7	120.8	75.3
1931.....	94.0	78.9	65.0	92.7		92.2	100.9	103.9	109.1	67.9
1932.....	86.9	65.5	60.4	70.5		89.3	93.3	97.8	99.0	61.7
1933.....	87.4	69.3	69.3	69.2		88.8	89.8	95.8	94.4	58.8
1934.....	93.4	83.5	80.5	86.5		96.8	95.5	97.9	95.6	59.6
1935.....	94.4	89.2	84.4	94.1	88.0	95.6	95.4	97.9	96.2	59.9
1936.....	96.7	97.9	102.2	93.7	96.9	98.7	98.1	98.3	98.1	61.1
1937.....	107.8	117.4	128.9	106.0	119.7	108.4	105.3	102.9	101.2	63.0
1938.....	102.0	102.9	100.9	104.8	105.0	101.2	101.7	101.9	102.2	63.7
1939.....	99.2	92.6	83.7	101.5	95.7	95.7	99.3	99.5	101.5	63.2
1940.....	108.0	96.1	85.4	106.7	96.8	101.8	106.8	108.5	105.6	65.7
1941.....	116.4	106.6	88.9	124.4	110.2	107.8	116.1	114.1	111.7	69.6
1942.....	123.0	127.1	109.7	144.6	133.1	119.2	131.6	119.0	117.0	72.9
1943.....	127.9	145.4	129.0	161.8	157.8	122.4	143.4	121.7	118.4	74.2
1944.....	130.6	155.3	144.5	166.1	172.4	126.0	148.0	122.8	118.9	74.6
1945.....	132.1	166.4	162.5	170.2	185.7	125.9	152.1	123.2	119.5	75.0
1946.....	138.9	179.5	177.9	181.2	204.1	128.0	157.0	127.1	123.6	77.5
1947.....	163.3	192.2	184.1	200.2	215.8	139.5	170.4	138.3	135.5	84.8
1948.....	193.4	232.1	200.6	263.7	255.8	173.1	197.4	162.8	155.0	97.0
1949.....	198.3	228.7	191.9	265.4	255.4	180.3	204.1	173.2	160.8	100.0
1950.....	211.2	236.7	191.9	281.4	260.8	189.9	210.4	177.6	166.5	102.9
1951.....	240.2	268.6	200.4	336.9	296.9	206.0	230.0	198.6	184.5	113.7
1952.....	226.0	247.2	216.9	277.5	270.4	215.8	243.1	209.8	187.5	116.5
1952										
May.....	224.5	252.7	240.0	265.4	269.2	.....	.....	.....	186.7	115.9
June.....	226.3	257.9	244.4	271.4	276.6	.....	.....	.....	187.3	116.0
July.....	225.3	252.8	230.2	276.8	275.7	.....	.....	.....	188.0	116.1
Aug.....	223.7	242.7	208.1	277.2	268.4	212.5	245.4	204.1	187.6	116.0
Sept.....	221.9	231.9	194.8	269.1	259.3	.....	.....	.....	186.5	116.1
Oct.....	220.8	227.8	192.7	263.0	252.0	.....	.....	.....	185.0	116.0
Nov.....	221.4	229.3	192.1	266.5	252.9	.....	.....	.....	184.8	116.1
Dec.....	221.0	228.8	189.4	268.3	252.1	.....	.....	.....	184.2	115.8
1953										
Jan.....	221.5	226.4	186.4	266.4	252.9	207.7	231.7	202.2	184.4	115.7
Feb.....	220.9	222.6	182.1	263.1	.....	.....	.....	.....	184.9	115.5
Mar.....	.....	.....	.....	.....	.....	.....	.....	.....	184.2	114.8

(a) Canada. Dominion Bureau of Statistics, Labour and Prices Division. *Prices and Price Indexes*. (Mimeo.) Ottawa, Monthly.

(b) Ibid (a). Wholesale prices of products of Canadian farms.

(c) Ibid (a). Wholesale prices of grains, hay, tobacco and potatoes.

(d) Ibid (a). Wholesale prices of animals and animal products.

(e) Canada. Dominion Bureau of Statistics, Agriculture Division. *Index Numbers of Farm Prices of Agricultural Products*. (Mimeo.) Ottawa, Monthly.

(f) Canada. Dominion Bureau of Statistics, Labour and Prices Division. *Price Index Numbers of Commodities and Services Used by Farmers*. (Mimeo.) Ottawa, Jan., Apr. and Aug. Includes prices of commodities in 8 groups including farm implements, building materials, gasoline, oil and grease, feed, fertilizer, binder twine, seed and hardware.

(g) Ibid (f). Includes the 8 commodities indicated above plus tax rates, interest rates and farm wage rates.

(h) *Price Index Numbers of Commodities and Services Used by Farmers*. Includes food, clothing, fuel, household equipment, health, maintenance and miscellaneous.

(i) *Prices and Price Indexes*. Includes food, rent, fuel and lighting, clothing, home furnishings and services, miscellaneous and retail prices of commodities.

(j) Canada. Dominion Bureau of Statistics, Labour and Prices Division. *The Consumer Price Index*. (Mimeo.) Ottawa, Monthly.

THE ECONOMIC SITUATION

Investment.—According to *Private and Public Investment in Canada—Outlook 1953*, a report prepared by the Dominion Bureau of Statistics and the Economics Division of the Department of Trade and Commerce, capital expenditures of business, institutions and governments and of individuals for housing in 1953 will probably reach a total of \$5.4 billion, an increase of six per cent in value from the previous record of \$5.1 billion realized in 1952. These capital expenditures will absorb about 23 per cent of the expected gross national production—another record for the postwar period. An easier supply situation is anticipated and, as a result, pressures on materials and prices are not likely to be as heavy as in previous postwar years.

The analysis of investment intentions indicates somewhat smaller expenditures for defence installations and a decline of five per cent in manufacturing outlays. Marked declines in pulp and paper products, iron and steel and chemicals will more than offset increased expenditures in transportation equipment, non-ferrous metals and petroleum refining. The continued rapid growth of the mining industry will be marked by a further increase of 18 per cent over the record established in 1952.

Outlays for new housing will reach \$981 million, or 15 per cent more than the \$850 million spent in 1952. Capital expenditures for new trade, financial and service facilities are estimated at \$431 million, more than one-third greater than the amount spent in 1952. Expenditures for the building and equipping of institutional structures will increase to \$305 million from \$255 million in 1952.

As stated in the report, "The capital expenditure programme as outlined reflects, for the most part, the stated intentions of business, institutions and governments. The possibility of this programme being realized will depend upon the availability of the necessary physical resources, upon there being sufficient available funds to finance such a programme and upon there being no substantial change in the general business outlook".

The "Budget".—In his budget speech delivered in the House of Commons on February 15, 1953 the Minister of Finance said that the value of Canada's gross national production was expected to reach a peak of \$24 billion in 1953, an

increase of \$1 billion from the previous high reached in 1952. He also affirmed his belief that present prosperity and industrial and economic expansion would continue throughout 1953 and that the demand for Canadian goods at home and abroad would continue at high levels.

Some important tax reductions were mentioned in the budget speech. Personal income tax has been reduced by 11 per cent starting July 1. Reductions in corporate income tax rates become effective on 1953 earnings; the present rates of 20 per cent on the first \$10 thousand of profits plus 50 per cent on profits in excess of that amount become 18 per cent on the first \$20 thousand of profits plus 47 per cent on profits exceeding \$20 thousand.

Revenues for the fiscal year 1953-54 are estimated at a record \$4,473 million compared with \$4,375 million in 1952-53 and expenditures at \$4,462 million compared with \$4,327 million, leaving an expected surplus of \$11 million for 1953-54 compared with the 1952-53 surplus of \$48 million.

Foreign Trade.—The total value of Canada's exports—domestic and foreign—declined from \$328.5 million in January 1952 to \$321.3 million in January 1953. The estimated total value of imports, on the other hand, rose from \$307.1 million to \$328.6 million.

The value of total exports to the United States increased only from \$191.3 million to \$191.7 million but exports to the United Kingdom increased from \$44.1 million to \$49.5 million. Estimated imports from the United States rose from \$228.7 million to \$250.2 million and imports from the United Kingdom increased from \$24.3 million to \$30.5 million.

Domestic Exports.—Canada's total domestic exports in January declined about two per cent from the \$324.1 million record of 1952 to \$317.3 million in 1953. This decline in value was due to lower prices; they averaged about five per cent less than in January 1952 whereas the volume of domestic exports was about three per cent greater.

Shipments to the United Kingdom, the United States and "other" foreign countries were higher in value than in 1952 but shipments to "other" Commonwealth countries as a whole and to the Latin American and European groups of countries were lower in value. Among major

commodities, wheat, newsprint paper, aluminum and products, copper and products, and nickel showed marked gains; fish and fishery products, wood pulp, farm machinery, and motor vehicles were substantially lower.

Exports to the United States rose from \$187.8 million to \$188.6 million and accounted for 59 per cent of the total exports, an increase of only one per cent from January 1952. Shipments to the United Kingdom increased from \$43.7 million to \$49.2 million but shipments to other Commonwealth countries declined from \$22.0 million to \$17.0 million.

Mainly because of large decreases in exports to Brazil and Mexico total exports to Latin American countries declined from \$28.8 million to \$18.2 million. Shipments to European countries dropped to \$21.5 million from \$27.3 million in January 1952.

Employment.—Employment, payrolls and average weekly wages and salaries in Canada's major non-agricultural industries were seasonally lower at the beginning of January 1953 than a month earlier but higher than in January 1952. The advance index of employment at January 1 stood at 187.1 compared with 192.2 at the first of December and 181.0 at January 1 last year. The payrolls index was at 429.8 compared with 459.5 at December 1 and 388.8 at January 1, 1952. Weekly wages and salaries averaged \$53.96 compared with \$56.12 the preceding month and \$50.42 at January 1, 1952.

Grains.—In a statement made in the House of Commons on February 18, 1953 the Minister of Trade and Commerce reported that good progress had been made with the merchandising of Western grains. Producers had delivered a total of 461 million bushels of grain up to February 1953—a volume which had not been exceeded during the corresponding period in any of the previous ten years.

Demand has been excellent, especially for wheat and barley. Exports were running well ahead of those in the corresponding period of the previous year when new records were established. The minister said that he had every reason to believe that the record exports of 1951-52 would be exceeded by a substantial margin in 1952-53.

The Government has approved an increase in the initial price of all grades of wheat, excepting Durums, from \$1.40 to \$1.60 per bushel basis No. 1 Northern in store Fort William-Port Arthur or

Vancouver. The increase became effective on March 2, 1953. An adjustment payment of 20 cents per bushel will be made to producers covering their deliveries of all grades of wheat other than Durums to the Canadian Wheat Board between August 1, 1952 and February 28, 1953.

The initial prices of all grades of Durum wheat will be increased by 25 cents per bushel and an adjustment payment will be made to all producers delivering Durum wheat to the Wheat Board between August 1, 1952 and February 28, 1953.

The Government increased the initial price of all grades of barley by 15 cents per bushel, effective March 2, 1953. The new initial price is \$1.11 per bushel basis No. 3 Canada Western Six-Row barley in store Fort William or Port Arthur; the previous initial price was 96 cents per bushel. The initial price of oats was left at the level then prevailing for the balance of the crop year.

The wheat adjustments were to commence on April 1 and were to be followed immediately by the barley adjustments.

Butter, Cheese and Margarine.—Production of creamery butter rose 24 per cent and domestic disappearance declined one per cent in February 1953 from the corresponding month in 1952. Production amounted to 9,462 thousand pounds as compared with 7,641 thousand, bringing the combined total for January and February to 20,130 thousand pounds as compared with 16,464 thousand. Domestic disappearance totalled 20,393 thousand pounds in February 1953 and 20,677 thousand in February 1952 and the January-February totals increased from 40,085 thousand to 41,149 thousand pounds.

Cheddar cheese production rose 22 per cent from 1,086 thousand pounds in February 1952 to 1,329 thousand pounds in February 1953. The corresponding totals for the January-February periods were 2,262 thousand and 2,639 thousand pounds. Production of process cheese increased from 3,642 thousand pounds in February last year to 3,741 thousand pounds in February this year.

Production of margarine declined slightly. From 9,386 thousand pounds in February 1952 it fell off to 7,578 thousand pounds in February this year. The cumulative output for the first two months of 1953 was 18,167 thousand pounds, compared with 18,784 thousand pounds in the corresponding period of 1952.

THE INFLUENCE OF PRICES ON THE RELATIVE CONSUMPTION OF BEEF AND PORK

T. G. E. WOOLLAM

Consumers spend a fairly constant proportion of their income on food. When food prices change they vary the proportion of the various kinds of food which they purchase. If only certain items increase in price, consumers will purchase less of these items and probably increase purchases of other items in order to maintain an adequate volume in total purchases of food. Meat is one of the important staple foods of Canadians but when its price rises relative to the prices of substitutes such as fish, poultry and eggs, these tend to replace meat on the Canadian table. Likewise, when prices of beef and pork change relative to one another, consumers respond by purchasing more of the one and less of the other kind of meat. This may occur while there is a shifting of consumption between meat and meat substitutes.

According to various studies of food consumption, the Canadian consumer has a stronger preference for beef than for other meats. These studies also indicate that he will not hesitate to substitute pork for beef when beef prices "get out of line". Pork production can be increased rapidly whereas beef supplies take longer to increase and this helps to make pork a good substitute for beef. Pork acts as a balancing factor in meat supplies.

The manner in which consumers react to various price differences between beef and pork is of interest to producers, processors, and even to consumers themselves. Information on consumer buying habits permits a more accurate appraisal of future developments and facilitates the formulation of enlightened production plans.

Substitution between beef and pork is not as simple a process as may be presumed from the foregoing comments. Consumers, in effect, may purchase a wide variety of cuts of different qualities, of both beef and pork. High quality cuts such as tenderloin, for example, are sold at higher prices than cuts such as those used as stewing meats.

Table 1.—Domestic Consumption from Inspected Slaughter and Wholesale Prices of Beef and Pork

October to September	Annual Domestic Consumption		Con- sumption Ratio Beef Pork $\times 100$	Annual Average Wholesale Carcass Price—Toronto		Price Ratio Beef Pork $\times 100$
	Beef	Pork		Beef	Pork	
	—million lbs.—		per cent	—\$ per cwt.—		per cent
1927-28.....	293.0	293.6	99.8	17.81	17.39	102.4
1928-29.....	300.0	298.8	100.4	19.18	19.61	97.8
1929-30.....	302.7	276.4	109.5	18.59	19.46	95.5
1930-31.....	306.8	272.6	112.6	13.35	15.30	87.3
1931-32.....	270.7	348.3	77.7	11.76	7.97	147.6
1932-33.....	289.0	327.4	88.3	9.62	8.30	115.9
1933-34.....	337.1	303.6	111.0	9.26	11.60	79.8
1934-35.....	354.6	281.3	126.1	10.10	12.66	79.8
1935-36.....	395.7	298.1	132.7	10.01	13.29	75.3
1936-37.....	404.5	354.0	114.2	11.51	12.89	89.3
1937-38.....	396.0	317.8	124.6	12.13	14.60	83.1
1938-39.....	394.4	313.6	125.7	11.90	14.07	84.6
1939-40.....	403.2	344.2	117.2	13.43	13.75	97.7
1940-41.....	441.0	483.2	91.3	15.44	14.47	106.7
1941-42.....	475.0	491.3	96.7	17.08	18.06	94.6
1942-43.....	483.6	512.0	94.4	18.38	18.38	100.0
1943-44.....	536.9	749.9	71.6	20.00	19.00	105.3
1944-45.....	606.1	627.7	96.5	20.00	19.00	105.3
1945-46.....	698.4	417.4	167.3	20.73	19.80	104.7
1946-47.....	646.2	414.8	155.8	21.87	22.35	97.8
1947-48.....	599.1	534.9	112.0	29.36	31.28	93.9
1948-49.....	589.6	572.6	103.0	38.92	35.17	110.7
1949-50.....	555.8	634.0	87.6	42.84	35.16	129.2
1950-51.....	506.3	664.7	76.2	52.30	39.13	133.6

There is considerable shifting in purchases among the different cuts of the same kind of meat as well as between the two kinds of meat. It would be interesting to analyze consumer response to quality price differentials for a given kind of meat but unfortunately the lack of relevant data precludes such an analysis. For the same reason it is impossible to study the average relationship between retail prices and beef and pork consumption.

Some useful information, on the other hand, can be gained from a study of average annual wholesale prices of carcass beef and carcass pork. In the following analysis the annual price is based on the twelve-month period from October to September. It is assumed that over a period of one year wholesale carcass prices reflect consumer demand. It is further assumed that the wholesale price of fresh pork carcasses will yield returns comparable to those obtained for processed (cured or smoked) cuts. Average monthly prices are weighted by monthly consumption to arrive at the price for each twelve-month period. Prices on the Toronto market are used on the assumption that they are representative of prices prevailing throughout the country. This market covers an important consuming area and draws supplies

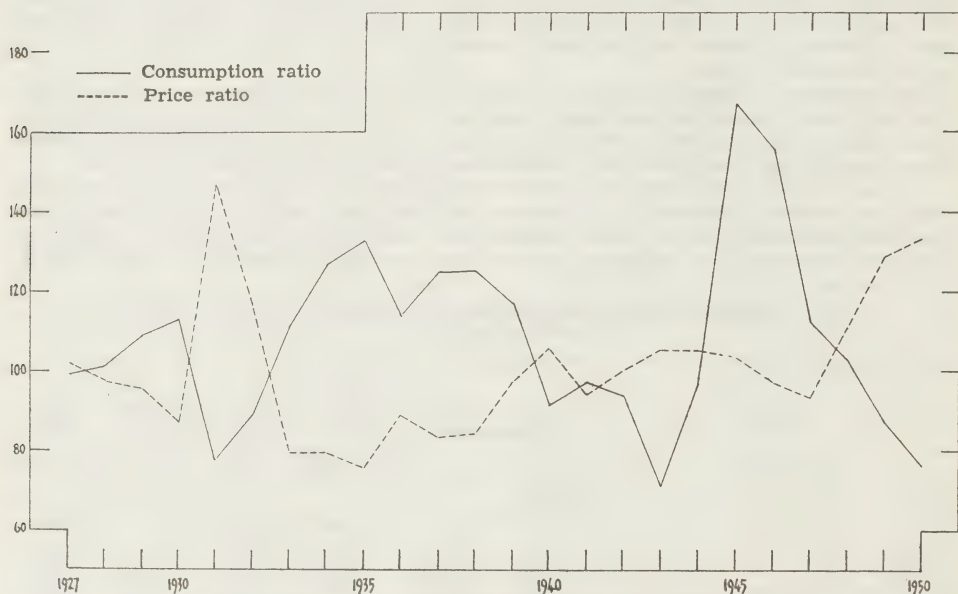


Figure 1. Ratios of Consumption and Prices of Beef and Pork.

from as far away as Alberta. All these assumptions are not expected to be in perfect accord with actual conditions on the various meat markets of Canada but they are deemed to have enough validity to form a realistic basis for a reliable analysis.

Estimates of consumption of beef and pork by twelve-month periods were made by adjusting the inspected meat production for imports, exports, and changes in storage stocks.

Annual consumption and average annual prices, and consumption and price ratios, are presented in Table 1.

When the price of beef was high relative to the price of pork, the consumption of beef was low by comparison with the consumption of pork. This movement in opposite directions is well illustrated in Figure 1 by the plotting of the consumption and price ratios on the same graph.¹ A regression analysis may also provide a good test of the conformity of our hypothesis with actual experience as well as a measure of the relationship between changes in relative prices and relative consumption of the two kinds of meat.

¹ The ratios are multiplied by a hundred so that they represent percentage relationships; that is, the price of beef as a per cent of the price of pork and consumption of beef as a per cent of the consumption of pork.

The equation of the average relationship between relative prices and consumption of beef and pork is:

$$\log X_1 = 4.07495 - 1.02890 \log X_2$$

where X_1 = Consumption of beef expressed as a percentage of the consumption of pork, and

X_2 = Price of beef expressed as a percentage of the price of pork.

Approximately 90 per cent of the variation in X_1 is associated with variations in X_2 . It may thus be said that 90 per cent of the variation in the relative consumption of beef and pork is due to the relationship between beef prices and pork prices. The remaining 10 per cent may result from the fact that the average wholesale price does not completely reflect the complex retail price structure of beef and pork cuts and the consumption data do not completely reflect the complicated substitution of one quality of one kind of retail cut for another.

Table 2.—Estimated Effects of Price Changes on Relative Consumption

Wholesale Price of Beef as Per Cent of Wholesale Price of Pork	Consumption of Beef as a Per Cent of Pork Consumption
150	69
142	72
135	76
129	80
122	86
116	90
110	95
105	99
100	104
95	109
90	115
85	124
81	129
77	136
73	143
69	150

The average relationship between relative prices and consumption during the period 1927-28 to 1950-51 is such that a one per cent change in the price of beef relative to the price of pork results in a one per cent change in the opposite direction in the consumption of beef relative to that of pork. This relationship is illustrated in Table 2. The price ratio of 150 is progressively reduced by five per cent and the value substituted in the estimating equation to give the value for the consumption ratio. The five per cent decrease in the price ratio resulted in approximately a five per cent increase in the consumption ratio.

The consumption of beef was 69 per cent of the consumption of pork when the price of beef was 150 per cent of the price of pork. That is, where beef prices were 50 per cent higher than pork prices, the consumption of beef was 31 per cent below the consumption of pork. Also when the price of beef was ten per cent above the price of pork, the consumption of beef was five per cent below the consumption of pork.

The estimated consumption ratio is an expected value; that is, the average of all the actual values which would result from many recurrences of the same price ratio. In an individual case, there may be some difference between the true and the estimated values. In the estimating equation (on which Table 2 is based), the actual value is likely to be within ten per cent of the estimated value in 19 cases out of 20.

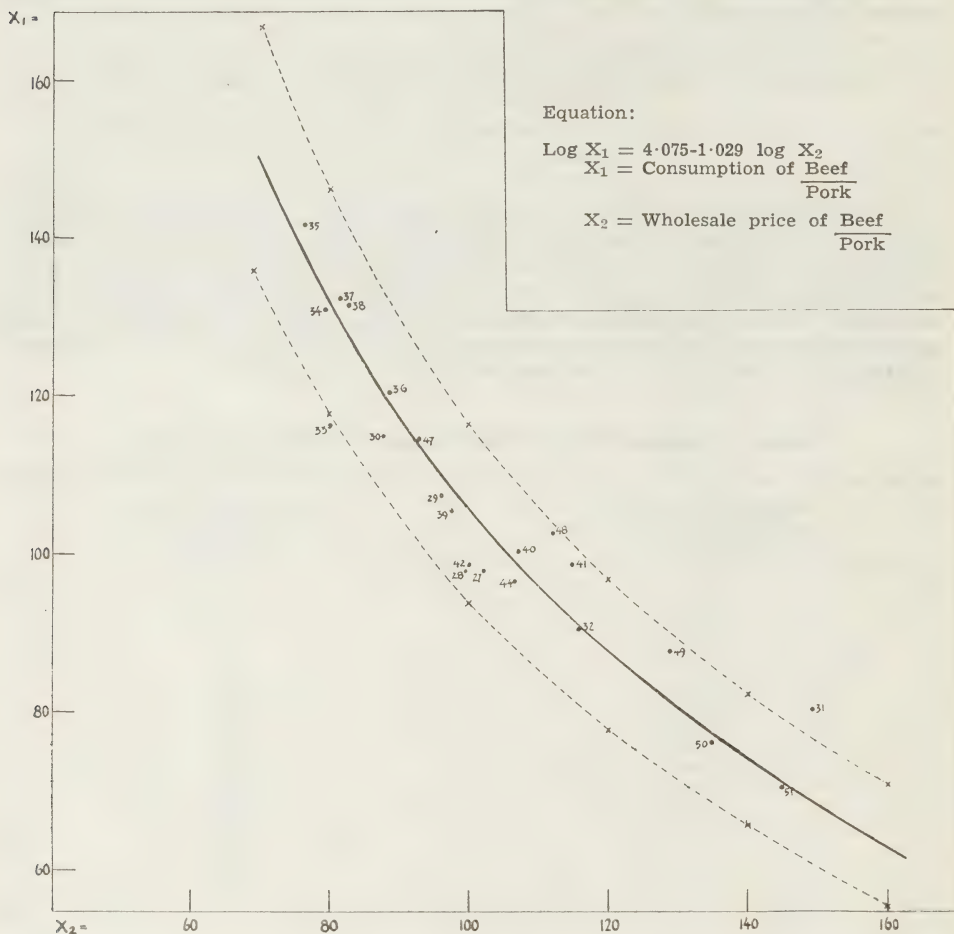


Figure 2. Relationship between the Consumption and Price Ratios of Beef and Pork.

Figure 2 shows the actual values for the period plotted along the mathematical curve which describes the relationship between the variables X_1 and X_2 . The dotted lines on either side of the curve represent the range inside which the actual values will fall in 19 out of 20 cases. This range represents two standard errors of estimate on either side of the curve.

A graphic analysis with the data plotted on double log paper gives a linear relationship.

The mathematical analysis gives the following values:

$$\log X_1 = 4.07495 - 1.02890 \log X_2$$

$$\bar{R} = .937$$

$$\bar{R}_2 = .879$$

$$S_x = .0238$$

$$cb = .069$$

Further analytical details on price and consumption relationships will be presented in Reference Papers on pork and beef substitution to be issued by the Economics Division.

CHOICE OF ALTERNATIVE FARM ENTERPRISES

HELEN C. ABELL

What are the factors which influence farm operators in mixed farming areas when they select one or several farming enterprises? It may reasonably be assumed that some of these factors are profit, suitable land and farm facilities, an adequate farm labour supply, and personal preferences. Some, and even all, of these factors may be considered by the same farmer. But, this assumption does not provide any indication of the relative importance of each of these and any other factors which may motivate farmers' decisions.

This information is best obtained through special studies or surveys. Conscious of the need for reliable information on farmers' motivations, the Economics Division made a survey in the mixed farming region of Central Alberta in the summer of 1952. Specially trained interviewers visited 202 farm operators representing one out of every six active farm operators in two census sub-divisions of that region. These census sub-divisions were Number 459, Bigstone, lying west of the city of Wetaskiwin and Number 339, Pine Lake, lying south and east of the city of Red Deer. In this article the first sub-division will be referred to as the Wetaskiwin area and the second one as the Red Deer area.

Among other questions, the respondents were asked why they did or did not carry on production of the following farming enterprises which were found on some farms in both areas: grain (barley and/or oats and/or wheat), beef cattle, dairy cattle, hogs, poultry and eggs, and sheep.

Answers to these questions fell into nine mutually exclusive categories: five were reasons for carrying on one or more of the aforementioned enterprises, three were reasons for *not* carrying on one or more of the enterprises and the last included answers which indicated that an enterprise was not handled, but offered no further explanation. There was no statistically significant difference between farm operators in either of the two rural areas concerning the proportion of men giving each type of answer.

The general reasons for carrying on one or more of the six farming enterprises and the relative frequency with which these answers were given are as follows:

1. As a direct source of income—40.7 per cent of all responses.
2. As a supplement to another enterprise; for example, beef cattle as a by-product of the dairy herd, or grain as feed for livestock—13.9 per cent of all responses.
3. As a source of food or fibre for home use—9.7 per cent of all responses.
4. As a way of utilizing available farm land or labour—9.2 per cent of all responses.
5. As an easy or pleasant enterprise for the operator to handle—2.7 per cent of all responses.

The general reasons for *not* carrying on one or more of the six farming enterprises and the relative frequency with which these answers were given are as follows:

1. Lack of necessary land, buildings, or capital—10.1 per cent of all responses.
2. Dislike of an enterprise and/or lack of time or labour supply—9.6 per cent of all responses.
3. Unsuccessful past experience with the enterprise—3.1 per cent of all responses.
4. No reasons given—1.0 per cent of all responses.

These replies provide some clarification of the motives which prompt farm operators to select alternative farm enterprises. It is pertinent, however, to examine in greater detail the relative frequency with which each reason was given in relation to the handling of grain, beef cattle, dairy cattle, hogs, poultry and eggs, and sheep. This examination will be facilitated by a study of the data contained in Table 1.

The main findings which these data illustrate may be listed as follows:

- (a) All of the respondents raised some grain; the most common reason for doing so was its use for livestock feed.
- (b) Over 90 per cent of the respondents raised beef cattle; the most common reason for doing so was to provide a direct source of income.
- (c) About 90 per cent of the respondents raised dairy cattle; the most common reason for doing so was also to provide a direct source of income.

Table 1.—Factors Influencing Choice of Six Farming Enterprises by Farm Operators in Two Mixed Farming Areas of Alberta, June-July, 1952

	Grain		Beef Cattle		Dairy Cattle		Hogs		Poultry and Eggs		Sheep	
	W. ¹	R.D. ²	W.	R.D.	W.	R.D.	W.	R.D.	W.	R.D.	W.	R.D.
	—percentage of farm operators—											
Enterprise is carried on:												
As a direct source of income	26.0	21.5	43.9	63.3	65.9	67.1	53.7	54.4	43.1	45.6	4.1	3.8
As supplementary to another enterprise	56.9	70.9	28.5	10.1								
As a source of food or fibre for home use					21.2	16.5	2.4	1.4	39.9	30.4	0.8	
As a way of utilizing available farm land or labour	9.8	5.1	13.0	13.9	2.4	3.8	34.1	24.1			1.6	
As an easy or pleasant enterprise to handle	7.3	2.5	7.3	3.8	2.4	1.3	2.4		2.4			
Enterprise is not carried because:												
Operator lacks necessary land and/or buildings and/or capital			6.5	5.1	1.6	2.5		2.5			52.8	49.4
Operator dislikes enterprise and/or lacks necessary time or labour			0.8	3.8	6.5	8.8	4.1	8.8	6.5	12.6	28.5	40.5
Unsuccessful past experience							3.3	8.8	6.5	10.1	6.5	3.8
No reason given									1.6	1.3	5.7	2.5
Total percentage	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Total number	123	79	123	79	123	79	123	79	123	79	123	79

¹ Wetaskiwin area.

² Red Deer area

- (d) About 90 per cent of the Wetaskiwin respondents and 80 per cent of those in the Red Deer area raised hogs. The most common reason for doing so was to provide a direct source of income but a considerable number of respondents raised hogs in order to utilize more of the available farm land or labour.
- (e) About 85 per cent of the Wetaskiwin and 76 per cent of the Red Deer respondents produced poultry and eggs on their farms, mainly to provide a direct source of income and food for home consumption. The chief reasons for not producing poultry and eggs were either a dislike of this enterprise (it was described as a "bother" by some respondents) or because of unsuccessful past experience with poultry.
- (f) Only about seven per cent of the farm operators in the Wetaskiwin area and four per cent of those in the Red Deer area raised sheep. The main reason given was that this enterprise provided a direct source of income. Reasons given by other farmers for not raising sheep were, in order of numerical importance: (1) lack of necessary space, facilities or capital (lack of fencing and difficulty with coyotes were frequently mentioned), (2) dislike of this animal (many operators simply said, "I don't like sheep"), and (3) unsuccessful past experience with these animals.

This study supports the hypothesis that the profit motive is the chief factor influencing the choice of alternative farm enterprises but consideration must be given to other important factors, such as the personal preferences of the farm operator.

Wool production in Canada (Newfoundland excluded) increased by nearly 12 per cent, from 6,882 thousand pounds in 1951 to 7,691 thousand pounds in 1952. Shorn wool increased from 5,700 thousand to 6,378 thousand pounds and pulled wool from 1,182 thousand to 1,313 thousand pounds. Because of a sharp drop in average prices in 1952, however, the total value of the shorn wool output was only \$2,265 thousand compared with \$4,231 thousand in 1951.

Exports increased to 3,639 thousand pounds from 2,656 thousand in 1951 and imports declined to 49,537 thousand pounds from 69,012 thousand in 1951.

FEDERAL AGRICULTURAL PROGRAMS AFFECTING PRICES OF FARM PRODUCTS, MARCH 1, 1952 TO FEBRUARY 28, 1953¹

MARJORIE R. CAMERON

Agricultural Prices Support Act, 1944—S.C. 1945-46, c. 29; 1947-48, c. 32; 1950, cc. 4+51.

Dry skimmed milk

Authority: P.C. 1953-252, February 19, 1953; P.C. 1953-253, February 19, 1953.

Support price: 8¢ per lb. for first grade dry skimmed milk (roller process) and 11.5¢ per lb. for first grade dry skimmed milk (spray process) f.a.s. Montreal, with appropriate transportation differentials for other manufacturing points.

In effect: For the purchase of 10 million pounds.

Not more than three million of the ten million pounds of dry skimmed milk which the Board is authorized to buy at these prices may be roller processed milk. All purchases are subject to the terms and conditions specified by the Board.

Butter

Authority: P.C. 2023, April 27, 1951; P.C. 4557, August 29, 1951.

Support price: 58¢ per lb. first grade creamery, basis Halifax, St. John, Montreal and Toronto, and 57¢ Vancouver.

In effect: May 1, 1951 to April 30, 1953.

The Agricultural Prices Support Board (hereafter referred to as "the Board") offers to purchase butter from the producer and to store it until needed in the market to supplement current production. All purchases made are subject to the terms and conditions which the Board specifies.

To complement the import program, the Board had authority to purchase from August 29, 1951 up to ten million pounds of first grade domestic creamery butter at a special price of 63¢ per pound, Montreal and 62¢ at Vancouver to meet consumer requirements during the fall and winter of 1951-52. This price took precedence over the 58¢ per pound price authorized to April 30, 1953.

Eggs

Authority: P.C. 6805, December 19, 1951.

Support price: 38¢ per dozen "A" large and 36¢ per dozen "A" medium at all storage points in Canada.

In effect: An appropriate period in 1952.

The Board offered to buy, out of storage during an appropriate period in 1952, eggs stored according to its specifications. In addition to these support prices the Board paid up to 5¢ per dozen to cover storage costs.

Authority: P.C. 4652, December 17, 1952.

Support price: 38¢ per dozen "A" large with appropriate differentials for other grades of eggs and egg products.

In effect: 1953.

This 1953 program extends price support for "such grades of eggs in such form as the Board may specify". The Board may buy, at any time, eggs (either in or out of storage) at a price equivalent to 38¢ per dozen for grade "A" large plus an allowance not to exceed 5¢ per dozen to cover costs associated with storage.

Pork products

Authority: P.C. 944, February 13, 1952; P.C. 2359, April 22, 1952 (fresh frozen Wiltshire sides).

Support price: The equivalent of \$26.00 per 100 pounds warm dressed weight, grade "A" carcasses at public stockyards, Toronto and Montreal with appropriate price differentials at principal public stockyards in Canada.

In effect: February 16 to September 30, 1952; April 22 to September 30, 1952 (fresh frozen Wiltshire sides).

¹ For information on these programs from January 1, 1950, see the October 1950 and April 1952 issues of *The Economic Annalist*.

In February 1952 the Board was authorized to buy until September 30, 1952 pork products processed according to Board specifications. The support price set for these products was 36½¢ per pound plus a maximum of 5¢ per pound to cover storage and handling charges. The prices at which the Board could buy fresh frozen Wiltshire sides between April 22 and September 30, 1952 were intended to maintain the price of \$26.00 per 100 pounds for grade "A" dressed carcasses at Montreal and Toronto.

Hogs and pork products

<i>Authority:</i>	P.C. 4141, September 24, 1952.
<i>Support price:</i>	The equivalent of \$26.00 per 100 pounds warm dressed weight for grade "A" carcasses at public stockyards, Toronto and Montreal with appropriate price differentials at principal public stockyards throughout Canada.
<i>In effect:</i>	October 1 to December 31, 1952.
<i>Support price:</i>	The equivalent of \$23.00 per 100 pounds same basis.
<i>In effect:</i>	From January 1, 1953.

From October 1, 1952 the Board has had authority to buy hogs and pork "in whatever form is considered preferable" at prices equivalent to the support prices for grade "A" carcasses.

Canned Pork

<i>Authority:</i>	P.C. 1411, March 8, 1952; P.C. 1859, March 31, 1952; P.C. 2536, April 30, 1952; P.C. 3410, June 27, 1952; P.C. 3914, August 27, 1952; P.C. 4217, October 1, 1952; P.C. 4574, November 28, 1952; P.C. 4716, December 30, 1952.
<i>Support price:</i>	The equivalent of \$26.00 per 100 pounds warm dressed weight grade "A" carcasses at public stockyards, Toronto and Montreal with appropriate price differentials at principal public stockyards in Canada.
<i>In effect:</i>	March 8 to December 31, 1952.
<i>Support price:</i>	The equivalent of \$23.00 per 100 pounds same basis.
<i>In effect:</i>	From January 1, 1953 until total purchases from March 8, 1952 reach 110 million pounds.

To utilize the domestic surplus of pork the Board was authorized to buy a maximum quantity of 110 million pounds of canned pork at prices which would be equivalent to the support prices for hogs and pork during the same period.

Cattle and Beef

<i>Authority:</i>	P.C. 2360, April 22, 1952.
<i>Support price:</i>	The equivalent of \$25.00 per 100 pounds live weight for "Good" steers at Toronto, Montreal and Moncton, with appropriate differentials for other grades and markets in Canada.
<i>In effect:</i>	April 9 to September 27, 1952 inclusive.
<i>Authority:</i>	P.C. 4142, September 24, 1952.
<i>Support price:</i>	The equivalent of \$25.00 per 100 pounds live weight for heavy steers and heifers (carcasses 700 pounds and up cold dressed weight, fat in basis, including the grades "A", "B" and "C").
<i>In effect:</i>	October 1 to November 15, 1952 inclusive.
<i>Support price:</i>	The equivalent of \$23.00 per 100 pounds live weight for "Good" (finished) steers at Toronto (except for heavy steers marketed before November 15, 1952), with appropriate price differentials for other grades and markets throughout Canada.
<i>To be effective:</i>	September 29, 1952 to March 31, 1953 inclusive or the lifting of the U.S. embargo, whichever is earlier.
<i>Support price:</i>	The equivalent of \$25.00 per 100 pounds live weight for "Good" steers at Toronto, Montreal and Moncton, with appropriate price differentials for other grades and markets throughout Canada.
<i>To be effective:</i>	From April 1, 1953 to May 31, 1953 or the lifting of the U.S. embargo, whichever is earlier.

These orders in council authorized the Board to buy cattle and beef at the support level until May 31, 1953 or the lifting of the United States embargo, whichever was earlier. The United States authorities on November 28, 1952 indicated that the import restrictions would be lifted March 1, 1953 if there were no further outbreaks of foot-and-mouth disease. On February 20, 1953 the Board announced that their buying program of cattle would end at the close of business on February 21st, to prevent the market being loaded with cattle and beef before the anticipated lifting of the embargo. The removal of the embargo was announced on March 2nd.

Agricultural Products Co-operative Marketing Act, 1939—S.C. 1939, c. 28; 1940, c. 19.

Forage crop seeds

- Authority:* P.C. 3797, August 14, 1952; P.C. 1953-2/27, January 12, 1953.
Initial payment: Approximately 23% of the average returns to producers during the previous three years for like grades and qualities.
In effect: 1952-53 agreement.

The Minister of Agriculture signed agreements with the two co-operative associations, which act as selling agencies for Saskatchewan and Alberta growers' organizations respectively, for the marketing of forage crop seeds grown in 1952. The co-operative selling agencies pay producers the initial payments stated in the agreement for various kinds and grades of seed when they deliver their crop. The federal Government guarantees the co-operative associations against loss in making the initial payment. Returns are pooled on a grade basis and deductions made for processing, carrying and selling costs. Final delivery dates under the agreement were December 15, 1952 in Saskatchewan and January 15, 1953 in Alberta.

Ranch-bred fox pelts

- Authority:* P.C. 1953-4/54, January 14, 1953.
Initial payment: Approximately 32% of the average returns to producers during the previous three years.
In effect: 1952-53 agreement.

This order in council authorized the Minister of Agriculture to sign agreements with four associations which market on a co-operative plan ranch-bred fox pelts produced in Canada, pelted subsequent to November 1, 1952, and delivered to the processor prior to May 1, 1953. The federal Government guarantees the initial payment to the producer. The marketing associations sell the pelts to the best advantage, pool the returns on a grade basis and deduct processing, carrying and selling costs. The agreement only acts as a support measure if the final return is less than the sum of the guaranteed initial payment plus the average processing, carrying and selling costs which may not exceed the maximum allowed under the agreement.

Apples for processing

- Authority:* P.C. 3913, August 27, 1952.
Initial payment: 15¢ per bushel of apples of "C" grade or better, of proper maturity for the manufacture of choice quality apple juice and sauce or good quality apple pulp and jelly plus a maximum of \$1.30 per bushel to cover processing, carrying and selling costs.
In effect: 1952-53 agreement (1952 crop).

This agreement between the Minister of Agriculture and the processor provides for a guaranteed initial payment of \$1.45 per bushel of apples ("C" grade or better) produced in the apple growing region of Quebec in 1952 and delivered for processing into choice quality apple juice and sauce, or good quality apple pulp and jelly. The processor pays the grower 15¢ per bushel after the apples have been delivered and inspected for processing. The processor must market the finished product by August 31, 1953 unless the Minister authorizes a later date.

Cheese price guarantee

- Authority:* P.C. 3021, May 30, 1952; P.C. 3552, July 31, 1952.
Initial payment: 24¢ per pound for first grade white, unwaxed Ontario cheddar f.o.b. factory.
In effect: Cheese produced in Ontario from April 1 to December 31, 1952.

The guaranteed initial payments for first, second and third grades of Ontario cheddar cheese were 24¢, 23¢ and 22¢ per pound respectively, and the maximum allowance to cover costs of assembling, storing, selling and distributing each of the three grades was 2½¢ per pound.

In July 1952 the Ontario Government guaranteed an additional payment of 6¢ per pound. For this reason the federal Government gave the association permission to make a subsequent payment of 6¢ per pound to the producers. This payment did not increase the liability of the federal Government under the agreement.

The Ontario Cheese Producers Marketing Association makes the initial payment when the factory delivers the cheese for sale. The Association markets the cheese and later distributes on a pooling basis any amount realized in excess of the initial payment plus processing, carrying and selling costs.

Turkey price guarantee

<i>Authority:</i>	P.C. 4303, October 23, 1952.
<i>Initial payment:</i>	Approximately 40% of the average price paid producers in the last three years.
<i>In effect:</i>	On turkeys delivered between October 6 and December 31, 1952 inclusive for processing and sale.

This agreement provided an initial guarantee for the marketing of a maximum of 500,000 pounds (dressed weight) of turkeys produced in the Province of Quebec in 1952 and delivered to the co-operative for processing and sale as dressed and eviscerated turkey.

Turkeys had to be classified by weight into two separate pools. Pool A consisted of turkeys weighing less than 18 pounds, which were sold by the processor on or before February 28, 1953. For these, the initial payment to producers was 20¢ per pound dressed weight for Grade "A" plus a maximum allowance of 8¢ per pound to cover processing and selling costs. Pool B consisted of turkeys weighing 18 pounds or more which were to be processed and sold on or before June 30, 1953. The initial payment for Grade "A" was 18¢ per pound dressed weight, plus a maximum allowance for processing, carrying and selling costs of 9¢ per pound. The agreement states appropriate price differentials for other grades in both pools.

The Minister of Agriculture may increase the total quantity which the processor may accept and extend the termination dates of sale.

Canadian Wheat Board Act, 1935—S.C. 1935, c. 53; 1936, c. 12, ss. 4+5; 1939, c. 39; 1940, c. 25; 1942-43, c. 4; 1947, c. 15; 1947-48, c. 4; 1950, c. 31; 1951, c. 3.¹

Wheat

<i>Authority:</i>	P.C. 4847, Sept. 12, 1951; P.C. 498 and P.C. 499, Jan. 25, 1952; P.C. 679, Feb. 7, 1952; P.C. 1222, Mar. 4, 1952; P.C. 4580, Dec. 4, 1952; P.C. 4529, Nov. 19, 1952; Pool transfer—P.C. 4508, Nov. 19, 1952.
<i>Price to producer:</i>	<i>Initial price per bushel basis No. 1 Northern in store Fort William-Port Arthur or Vancouver:</i> \$1.40; Feb. 1/52 increased by 20¢; final payment, 23.333¢; total return, \$1.83333.
<i>In effect:</i>	1951-52 pool (Aug. 1, 1951-July 31, 1952).
<i>Authority:</i>	P.C. 3381, June 23, 1952; P.C. 3675, July 31, 1952; P.C. 3904, Aug. 27, 1952; P.C. 4488, Nov. 13, 1952.
<i>Price to producer:</i>	<i>Initial price per bushel basis No. 1 Northern in store Fort William-Port Arthur or Vancouver:</i> \$1.40; Mar. 2/53 increased by 20¢.
<i>In effect:</i>	1952-53 pool (August 1, 1952-July 31, 1953).

Until July 31, 1953 interprovincial and export trading in wheat, wheat products, oats and barley remain the responsibility of the Board or subject to regulations made by the Governor in Council. Farmers receive initial prices for wheat, oats and barley and a producer's certificate showing quantity and grade delivered. This certificate entitles them to share in any surpluses accumulated by the Board in the sale of the respective grains during the pool period.

¹ Bill 223, to amend the Act, received first reading in the House of Commons on March 16, 1953.

The domestic prices for the 1951-52 wheat crop were the same prices for which the Board sold wheat for export under the terms of the third year of the International Wheat Agreement: ceiling price \$1.80 (U.S. funds) and floor price \$1.30 per bushel for No. 1 Northern in store at the Lakehead or Vancouver. There was an additional 6 cents per bushel carrying charge on I.W.A. and domestic sales of the 1951-52 crop. The 1951-52 wheat pool was closed October 24, 1952 and 103.2 million bushels transferred to the 1952-53 pool.

The ceiling price is \$1.80 (U.S. funds) and floor price \$1.20 for sales of domestic wheat and those under the final year (fourth) of the International Wheat Agreement. There is an additional 6¢ per bushel carrying charge on these sales. The United Kingdom has agreed to buy approximately 115 million bushels of wheat or wheat in the form of flour under the International Wheat Agreement for registration in 1952-53.

Oats

Authority: P.C. 3906, July 31, 1951; P.C. 4846, Sept. 12, 1951; P.C. 3765, Aug. 14, 1952; P.C. 4305, Oct. 15, 1952. Pool transfer—P.C. 4304, Oct. 15, 1952.

Price to producer: Initial price per bushel basis No. 2 C.W. in store Fort William-Port Arthur: 65¢; final payment 18.614¢; total return, 83.614¢.

In effect: 1951-52 pool (Aug. 1, 1951-July 31, 1952).

Authority: P.C. 3381, June 23, 1952; P.C. 3935, Sept. 4, 1952; P.C. 4594, Dec. 4, 1952.

Price to producer: Initial price per bushel basis No. 2 C.W. in store Fort William-Port Arthur: 65¢.

In effect: 1952-53 pool (Aug. 1, 1952-July 31, 1953).

Unsold stocks of oats in the 1951-52 pool amounting to 17.4 million bushels were transferred to the 1952-53 pool on September 26, 1952.

Barley

Authority: P.C. 3906, July 31, 1951; P.C. 4846, Sept. 12, 1951; P.C. 1223, Mar. 4, 1952; P.C. 1308, Mar. 7, 1952; P.C. 3764, Aug. 14, 1952; P.C. 4384, Oct. 30, 1952. Pool transfer—P.C. 4331, Oct. 23, 1952.

Price to producer: Initial price per bushel basis No. 3 C.W. Six-Row in store Fort William-Port Arthur: 96¢; Mar. 1, 1952 increased by 20¢; final payment, 13.200¢; total return, \$1.2920.

In Effect: 1951-52 pool (Aug. 1, 1951-July 31, 1952).

Authority: P.C. 3381, June 23, 1952; P.C. 3935, Sept. 4, 1952; P.C. 4594, Dec. 4, 1952.

Price to producer: Initial price per bushel basis No. 3 C.W. Six-Row in store Fort William-Port Arthur: 96¢; Mar. 2, 1953 increased by 15¢.

In Effect: 1952-53 pool (Aug. 1, 1952-July 31, 1953).

Stocks of cash barley in the 1951-52 pool, totalling 11.4 million bushels, were transferred to the 1952-53 pool on October 3, 1952.

Canadian Goodwill Trade Mission to Latin America

A goodwill trade mission led by the Minister of Trade and Commerce, the Right Hon. C. D. Howe, left Ottawa on January 5 for a five-week tour of nine Latin American countries. The purpose of the tour was to gain first-hand knowledge of these countries and learn what can be done to develop and strengthen import and export trade with them. As stated by Mr. Howe in the House of Commons on February 26, 1953, "This was a visit of friendship and goodwill to strengthen the broad basis of trust and mutual interest on which alone a sound flow of trade can be developed".

As stressed by Mr. Howe's statement to the House our trade with Latin America is one of the brightest spots in the world trade picture. Our total trade with this area increased from \$33 million in 1938 to about \$560 million in 1952, and as a percentage of our trade with all countries, has tripled since prewar. Over six per cent of our exports go to this area and seven per cent of our imports come from it.

DEVELOPMENT OF RESEARCH ON FOOD CONSUMPTION BY THE ECONOMICS DIVISION

L. E. DRAYTON

Consumption economics was recognized as a field for research from the establishment of the Economics Division in 1929. It was considered one phase of marketing research which the Division would undertake. Thus, the first major research project undertaken by the Division included the collection of some data on apple consumption. This project was a study of apple production and marketing. Mail questionnaires were sent to consumers in Montreal and Toronto to obtain information on their habits in buying and consuming apples. Articles in the November and December 1931 and January 1932 issues of *The Economic Annalist* reported the findings of the consumption phase.

Meanwhile, the Division undertook a study of milk marketing in Sydney, Glace Bay and surrounding Nova Scotia towns in August 1931 in co-operation with the Nova Scotia Department of Agriculture and St. Francis Xavier University. Through the co-operation of milk distributors it was possible to assemble data on the number of households which purchased one, two, three, four and more than four pints of milk each day and to obtain a very close approximation of per capita fluid milk consumption in the towns of the area. These data were supplemented by mail questionnaires which provided a basis for relating milk and cream consumption for families in the area to income.

The formation of the Dominion Marketing Board in 1934 gave an impetus to marketing research in the Economics Division. It was recognized that the development of sound schemes under the Natural Products Marketing Act would be, to a considerable extent, dependent on greater knowledge of marketing processes and especially of the capacity of the domestic market to absorb perishables at different price levels. Whether the Dominion Marketing Board should undertake its own research was considered. It was finally agreed, however, that the staff of the Economics Division should be expanded to carry on this research. Thus, Dr. W. C. Hopper was appointed late in 1934 as Secretary of the Dominion Marketing Board and Chief of the Division of Marketing, Economics Branch.

The time was opportune to expand research on food consumption. The depression had reduced both domestic and export demand for food commodities. For products like wheat, cheese, and apples, surpluses could not be eliminated without regaining export markets or sharply contracting production; foods produced mainly for domestic and local markets also gave rise to marketing problems. Studies of the relation between the rate of consumption for these foods and income, race and other family characteristics, would provide a guide as to the most practicable methods of rebuilding and expanding domestic markets for them. Consequently, considerable emphasis was placed on the study of consumer preferences in the next few years.

During 1935 a major study of consumption of cheese and milk in Canada was undertaken. Consumers were interviewed in Quebec City, Oshawa, Calgary, three villages and a number of rural areas. At the same time, data were obtained on egg consumption and, in Quebec City, on use of maple products. A number of articles reporting on this study appeared in *The Economic Annalist* from 1936 to 1938 and two reports were published.¹

In the following year, 1936, another major consumer preference study was launched. This study concerned the consumption of meats in Saint John, Montreal and Vancouver. Additional data were obtained on the use of fish, eggs and milk. Many of the findings of these studies were released to the public through a series of articles in *The Economic Annalist* in subsequent years, and six bulletins were published.²

¹ Boucher, G. P. and W. C. Hopper. *An Economic Study of Cheese Consumption in Certain Urban and Rural Districts of Canada*, 1939. Pub. 658, Tech. bul. 22. December 1939. pp. 34; and *An Economic Study of the Consumption of Milk and Cream in Certain Urban and Rural Districts of Canada*, 1938. Pub. 608, Tech. bul. 14. 1938. pp. 42.

² Johnston, C. I. and W. C. Hopper:

Consumption of Milk and Cream in the City of Vancouver. January 1939. pp. 27.

An Economic Study of the Consumption of Milk and Cream in Vancouver. Pub. 678, Bul. 25, 1940. pp. 41.

Consumption of Meat in City Households. 1942. pp. 23.

Consumption of Lamb in City Households. August 1942. pp. 19.

Consumption of Beef and Veal in City Households. 1942. pp. 28.

Consumption of Pork, Bacon, Ham, Sausages, Liver and Poultry in City Households. 1942. pp. 29.

On the request of the Associated Country Women of the World, a study was made of the consumption of milk, cream, butter and cheese in rural households in Canada during 1937. Questionnaires were distributed by extension workers and returned by mail. Findings were published both in *The Economic Annalist* and in bulletin form.¹

Another consumer preference study concerned apple juice and solid pack canned apples. Questionnaires were completed by visitors to the Canadian National Exhibition, the Sherbrooke Fair, and the Quebec Provincial Exhibition during 1940, and findings were reported in *The Economic Annalist* the same year.

The basic finding of the Division's work in Consumption Economics during the 1930's was concisely stated by Dr. Hopper as follows:

These studies of the consumption of protective foods indicate that the income of the city household largely determines the quantities of these foods which are available for the family table.²

Although incomes and rates of consumption were not measured with sufficient precision to compute income elasticities of demand, the data suggest that for most of these protective foods income elasticity of demand decreased as income increased. This might well be expected, as at a certain level of income considerations of cost of these foods at normal market prices cease to be an important determinant of extent of use. Rather, use is determined primarily by food habits and individual preferences when the income level is sufficiently high that economy in buying food ceases to be necessary to balance the family budget.

Most of the studies of the late thirties had been consumer preference surveys based on interviewing housewives on their use of a few specific foods. In 1939, there was a significant departure from this pattern.

To relieve excessively large stocks of butter that year, vouchers were distributed to families on relief and other low income families entitling them to certain quantities of butter at no cash cost. To determine the effect of the distribution of free butter on consumption, data were obtained from a representative sample of the families receiving it, on their purchases before, during and after distribution. These data established that consumption of butter by families receiving the vouchers increased by about 50 per cent during the period of free distribution and returned to its prior level at the end of this period.

Meanwhile, pressure had developed for research on the adequacy of the diet of all Canadians and of specific sectors of the population. In 1937 the Mixed Committee of the League of Nations on The Relation of Nutrition to Health, Agriculture and Economic Policy recommended that Governments should:

13. In order, inter alia, to ascertain how far existing National dietaries fall short of the new standards of nutrition, collect information on food consumption by families of different occupational groups at different income levels as well as on the distribution of the population by family income.³

This recommendation was accepted by Canada and in subsequent years the Canadian Council on Nutrition pressed for research. Such research was considered to be the joint responsibility of the Nutrition Division of the Department of National Health and Welfare, and the Economics Division of the Department of Agriculture.

While the League of Nations and the Canadian Council on Nutrition had been concerned with regional and occupational dietary levels, World War II rendered necessary a comparison of the overall food supplies of the Allied countries. Rationing, to make more food available for export, had to be justified on the basis of greater need. Consequently, a special joint committee of the Combined Food Board of the United Kingdom, the United States and Canada was set up to study and report on food consumption levels in these three countries. Preparation of data for the use of this committee became an important part of the work in consumption economics.

Meanwhile, most members of the technical staff of the Economics Division were associated in some way with the work of various wartime administrative agencies. Thus, new projects were limited in number and in scale. One such project was a consumer preference study undertaken in 1941 at the request of the Provincial Dairy

¹ Hopper, W. C. and P. H. Casselman. *Consumption of Dairy Products in Rural Canadian Homes*. September 1940. pp. 45.

² Hopper, W. C. "Income and Food Consumption". *Canadian Journal of Economics and Political Science*, Vol. 9, No. 4:506, November 1943.

³ *Final Report of the Mixed Committee of the League of Nations on the relation of Nutrition to Health, Agriculture and Economic Policy, 1937*. Geneva, 1937. p. 56.

School in St. Hyacinthe, Quebec. The city and the Dairy School desired information on milk consumption as a basis for a milk pasteurization program. Interviewing was undertaken by students of the school while analysis and preparation of a report for submission to the school were carried through by the Economics Division.

A quite different type of food consumption study was undertaken when the fluid milk subsidy was instituted by the Federal Government in December 1942. Data were secured from milk distributors in a number of cities on milk sales for a period of eight weeks preceding and 13 weeks following institution of the subsidy. This study revealed that the resulting price decline led to a fairly sharp increase in milk consumption.¹

Another phase of the work in economics during the war years was a study of problems in postwar reconstruction. The possibility of the occurrence of surpluses of certain foods was envisaged and food distribution programs which had been undertaken in other countries—especially the United States—were carefully evaluated as to their merits for disposing of such surpluses.

Also, a start was made during the war years on the study of dietary levels of specific sectors of the population. This start took the form of two pilot studies, one in Stormont County, Ontario, and the other on Ile Perrot, near Montreal. Each involved small numbers of families.

During the later war years, Canada Approved Vitamin B white and brown flours were developed. Special milling processes, to retain larger quantities of the natural Vitamin B in wheat, were used in the production of this flour. Bread made from such flour was sold as Vitamin B bread. To evaluate the degree of consumer acceptance of this flour and bread, a joint study with the Consumer Section of the Department of Agriculture was undertaken in the spring of 1945.

While this study was still under way, the Division's first major study in dietary levels was started. This concerned overall food consumption by farm families in each of the three maritime provinces. Unfortunately, staff turnover and other problems delayed completion of this study and it is only recently that final reports have been prepared.²

No other major projects in the field of consumption economics were undertaken until 1950, although data were assembled for the Agricultural Prices Support Board on the merits and potentialities of various food distribution programs.

Nevertheless, there was a continuing need of research in the field of food consumption. National consumption data on various agricultural commodities had been published for many years but these series had not been co-ordinated. There was also some doubt as to the consistency of some of the series. Accordingly, a joint study with the Agriculture Division of the Dominion Bureau of Statistics was launched in 1950 to consolidate available statistics on national food disappearance. Completion of this study has been delayed to allow for revisions of certain statistics based on the 1951 census.

In spite of general prosperity in the postwar period, there have been problems of surplus production of certain foods. Loss of the British market created a rather acute problem with regard to cheese. It was known that if Canadian consumption of cheese increased to the level found in most other Western countries, the surplus would be absorbed, but little information was available on the nature of the domestic demand for cheese. Accordingly research became necessary on variations in cheese consumption in various regions of the country and the causes of these variations. A start was made on the study of this broad problem in 1951 and two preliminary reports have been released.³ A more detailed report is currently being prepared.

This study of cheese consumption is indicative of the type of research which is likely to develop as an important phase of consumption economics in the future. The measurement of total quantities of a specific food moving into retail channels in a city or other area had not previously been attempted in Canada. However, the experience of market area studies has indicated the possibilities of this type of research.

¹ Choquette, R. *The Effect of the 2-cent per Quart Consumer's Subsidy on Milk*. Unpublished M.A. Thesis. Ottawa, Ont., University of Ottawa. 1944.

² Johnston, Charlotte I. and L. E. Drayton:

Consumption of Food by Farm Households in New Brunswick, 1945-46. October 1952. pp. 50.

Consumption of Food by Farm Households in Nova Scotia, 1945-46. In process.

Consumption of Food by Farm Households in Prince Edward Island, 1945-46. In process.

³ *Consumer Preferences and Use of Cheese in Ottawa, Toronto and Vancouver*. March 1952.

pp. 16; and *Demand for Cheese in Selected Canadian Cities*. October 1952. pp. 4.

Co-ordinated with consumer preference data as a basis for interpretation of regional differences, this type of study can open up new vistas in the understanding of the nature of the domestic market for specific foods.

There is need for further research in the field of food consumption. Grading standards have been developed as an aid in marketing agricultural products but little research has been done to determine the accuracy of these standards in reflecting consumer requirements. New marketing techniques and food handling methods designed to improve the quality or uniformity of food being offered are continually being developed. Information on consumer response is essential for a reliable evaluation of these techniques. For example, potatoes can be sold in lots that are uniform in size and starch content if the consumer desires this. The real test of the merits of such an innovation is whether enough consumers under normal conditions of the market are willing to pay a sufficient premium for potatoes sorted in this way to cover added marketing costs. The controlled experiment method of research, which is a relatively new development in the field of economics, should prove very useful in probing this type of problem. A study of this type has been undertaken recently by the Horticultural Division of the Experimental Farms Service and is being closely observed. It is expected that controlled experiments on consumer response to new quality standards and changes in merchandising practices will become an important phase of the work in consumption economics.

RECENT FREIGHT RATE AND TRANSPORTATION DEVELOPMENTS

E. P. REID

Since last reviewed in the *Economic Annalist*¹ the general level of railway freight rates has been increased four more times. The level of April 7, 1948, was that at which rates were fixed under the control policy of World War II. For many commodities, including important farm products groups, the rates which expired after that date had been in effect for more than 25 years. The following tabulation brings the record of general freight rate changes up to March 1953.

All these rate changes were authorized by the Board of Transport Commissioners for Canada according to its powers under the Railway Act. Furthermore, all these changes were made in "general revenue cases" brought by the railways when they felt the pinch of costs rising more rapidly than gross revenues. The Board has long regarded the Canadian Pacific Railway as the "yardstick", and has recognized a level of annual net earnings from rail operations for that company as its "requirements". This figure is currently about \$46.6 million, comprised of \$11.3 million for fixed charges, \$20.1 million for a five per cent dividend on common and a four per cent dividend on preferred stock, and \$15.2 million for surplus. A general revenue case is brought by the railways when earnings or prospective earnings of the C.P.R. rail enterprise are demonstrably below \$46.6 million; the Board has this figure in mind in arriving at its judgment, but does not guarantee any level of earnings.

Because of the level of corporation income tax, it takes about two dollars of new rail revenue to provide an additional one dollar net. Moreover some important segments of freight traffic are not subject to the general increases authorized by the Board. For these two reasons the percentage of increase that is sought to make up a given deficiency in earnings is much higher than the figure that would be obtained by setting such deficiency against current gross freight revenue.

The four most recent increases tabulated in Table 1 are parts of two general revenue cases. The awards of 1951 and 1952 are interim and final on a case that was brought in late December 1950 upon the publication of the Kellock wage award settling the labour dispute that had led to the railway strike of August 1950.² The award effective at the beginning of the current year was granted to cover the increase in railway operating expenses arising from the wage increase negotiated between the railways and the non-operating employees in December last. The award for March 1953 is intended to bring railway net earnings more nearly in line with "requirements".

¹ February 1951, p. 20.

² *The Economic Annalist*, February 1951. p. 21.

Table 1.—Changes in General Level of Rail Freight Rates in Canada, 1922-1953
(Based on \$1.00 per 100 pounds on April 7, 1948)

Effective date	Cents per 100 pounds	Basis for Increase
April 7, 1948 ^a	100	
April 8, 1948.....	121	21 p.c. case
October 11, 1949.....	131	
March 23, 1950.....	140	20 p.c. case
June 16, 1950.....	145	
July 26, 1951.....	162	
February 11, 1952.....	170	17 p.c. case
January 1, 1953.....	185	9 p.c. case
March 16, 1953.....	198	7 p.c. case

^a Many rates effective on this date had prevailed since 1922.

A related case for increased freight rates is pending at the time of writing.¹ It is a request of the C.P.R. to be allowed a percentage return on its investment in rail enterprise. Its own report of the latter figure is \$1,146,000,000 (December 31, 1951) and the return which it wants recognized is 6½ per cent. This would imply a considerable immediate increase in rates. However, the railway contends that the better surplus position it would then achieve would permit modernization and capital investments leading to operating economies which would in due course benefit freight payers. The Canadian National Railways are non-active in this case, not enthusiastically in favour nor opposed.

There have been a number of instances in which rates of concern to agriculture have been subject to increases greater or smaller than the general changes outlined in the tabulation above. Some of these have been contested and some have followed required periods of notice by the carriers.

1) Eastern grain rates were increased in 1949.²

2) A series of agricultural rates—educational or development—such as reductions on farm machinery from eastern to western Canada, seed when registered, livestock when purebred or moving between exhibitions, feed grain from Alberta to British Columbia, and others, were withdrawn mostly in 1949 and 1950.

3) Livestock rates were increased December 15, 1950.³

4) Rates on most commodities moving between eastern and western Canada were on May 1, 1952 reduced 2.53 per cent plus 5.8 cents per 100 pounds. This implemented legislation which followed a recommendation of the Royal Commission on Transportation concerning the "economic bridge" across northern Ontario. The reduction was on a scale judged by the Board to aggregate \$7 million per year of railway freight revenue. This benefit, mainly to the people of western Canada who depend on the East for supplies and markets, will be returned to the C.N.R. and the C.P.R. by payments from the federal treasury totalling \$7 million a year.

5) Western domestic grain rates were increased about 25 per cent, effective November 10, 1952. These rates, though not strictly "Crowsnest", had been exempt from postwar increases along with Crowsnest (export) grain rates until this decision. Such domestic grain rates will now be subject to general rate changes, as for example in the nine per cent decision effective January 1, 1953.

6) Potatoes received a "reduction" by default when they were exempted from the 4½ per cent increase of February 1952. The reason for this was the Board's recognition of the vulnerability of the potato industry in the face of freight rate increases.

¹ March 15, 1953.

² *The Economic Annalist*, December 1949. p. 131.

³ *The Economic Annalist*, February 1951. pp. 19-20.

7) As already mentioned in item 5, rates on Prairie grain to Fort William-Port Arthur, to Churchill, and to Pacific Coast ports for export have not been increased at all—they are the same as they were in 1925-47—as a result of a requirement of the Railway Act (covering Lakehead shipments) and a Board policy (covering Churchill and Pacific Coast shipments) strongly influenced by the statutory requirement. Grain, which provides 60 per cent of the gross farm income in the Prairie Provinces, constitutes about 35 per cent of all railway traffic originating in the West.

Legislation.—The Royal Commission on Transportation made many definite policy recommendations respecting rail transportation,¹ and a number of these were implemented in a series of amendments to the Railway Act in December 1951.² One which has already affected rates is the provision for a subsidy to the railways to maintain the track on their lines running through the “economic bridge” of northern Ontario from Sudbury to Fort William and from Cochrane to Armstrong. The analogy of the toll-free canals of eastern Canada was cited in the Royal Commission’s recommendation. The cost of such maintenance was estimated at \$7 million per year, and this amount will be paid to the two transcontinental railways, which have in turn reduced rates on traffic passing over the whole of the “bridge” by amounts aggregating about that amount of concession to shippers.

Important in the long run is the addition to the Railway Act of a declaration of a national freight rates policy: “Subject to . . . exceptions . . . , every railway company shall, so far as is reasonably possible, in respect of all freight traffic of the same description, . . . passing over all lines or routes of the company in Canada, charge tolls to all persons at the same rate, whether by weight, mileage, or otherwise.” The new feature is that shippers in one territory must be treated the same as shippers in another territory. Previously, discrimination, not permitted if unwarranted, had to be shown in a situation where actual competition existed and rates on a commodity applicable in a distant part of the country—say within central Canada—could not be used in arguing for reductions—say within western Canada. Board action under this “equalization” clause has been the recent publication of a uniform class mileage scale of rates for all Canada west of the Maritimes and lower St. Lawrence, but such scale will not be effective for another year to allow discussion, both formal and informal, during 1953. The scale suggests class rate reductions in the West and increases in the East, inasmuch as such rates in the East have been historically lower. The Maritime scale is to be left undisturbed. Eventually many commodity rates are also to be equalized under the national freight rates policy.

An important Royal Commission recommendation implemented in the Railway Act amendments was the “one-and-one-third” rule respecting transcontinental rates and rates on shipments to intermediate territory. Rates from eastern Canada to Pacific Coast points are in certain instances water-competitive—related to traffic through the Panama Canal. They were lower than rates from the same eastern

Table 2.—Freight Rates on Canned Goods

Date	From B.C. Coast Points to Calgary and Edmonton	From Southern Ontario		
		Trans- continental	1½ Rule	Combination on Vancouver to Calgary and Edmonton
—cents per 100 pounds—				
July 26, 1951.....	140	157	.....	297
January 15, 1952.....	140	157	209	.....
February 11, 1952.....	146	157	209	.....
March 1, 1952.....	146	164	219	.....
April 21, 1952.....	146	190	253	.....
January 1, 1953.....	159	207	276	.....
March 16, 1953.....	170	221	295	.....

¹ See *New Look at Transportation Policy, Significance to Agriculture of the Royal Commission Report*, by E. P. Reid. Canada Dept. of Agriculture, Economics Div. May 1951. pp. 8. (Out of print.)
² *Statutes of Canada*, 1951, Vol. 2, chap. 22.

territory on the same articles to Prairie and Interior B.C. points. This was legal as a permitted departure from the long-and-short-haul clause, but was a sore point with people and industries not enjoying the low Coast rates though much nearer the sources of supply. The new rule is that no rate to an intermediate point may exceed a competitive transcontinental rate for the same commodity by more than one-third. This has required either the reduction of some rates to the Prairies or the increase of transcontinental rates; in actuality both actions have been taken. The main agricultural commodity group affected has been canned goods. Expected marketing effects would be to strengthen British Columbia products against Ontario competition in the populous coastal area and to improve the Ontario canners' position relative to B.C. canned goods on the western Prairies.

The foregoing table is of assistance in examining the change in the competitive situation for canned fruits and vegetables between British Columbia Coast producers and those of Ontario on the Calgary and Edmonton markets. The effective rate to the Alberta cities previous to January 15, 1952, when the $1\frac{1}{2}$ rule became effective, was a combination on Vancouver, substantially less than the class rate which alone was available on direct consignment. (The car did not have to go to Vancouver and back to Calgary, but the bill of lading was compiled to suggest this in order to get a rate combining the low transcontinental rate and the local rate back from Vancouver to Calgary.) Thus Ontario paid \$2.97 per 100 pounds to Calgary versus Vancouver's rate of \$1.40. The new rule granted Ontario a new rate derived from the transcontinental rate alone ($1\frac{1}{2}$ times it), namely \$2.09, a reduction of 88 cents. Vancouver's rate was unchanged at \$1.40. The possibility of Ontario either commencing to enter the Alberta market or gaining an even stronger foothold there if already selling in Alberta may be seen.

Various changes since January 15, 1952 in both rates, including the effect of general increases and special increases of transcontinental rates have left today's rates to Calgary: Ontario \$2.95 and Vancouver \$1.70. Thus in relation to pre- $1\frac{1}{2}$ days Vancouver's rate is up 30 cents and Ontario's is down 2 cents, a total advantage to the latter of 32 cents. Unfortunately no evidence as to changes in supplies of canned goods from various areas to Alberta has been available for examination.

FAO IN 1952

S. C. HUDSON¹

As a result of the decision of the FAO Conference to meet biennially, 1952 was the first year since the establishment of FAO at Quebec in 1945 that a session of the 68 member-government Conference was not held. The 18 members of the Council of FAO which administer the organization between Conference sessions met twice in 1952, in June and again in November.

Increased Food Needs.—As a result of its review of the world food and agricultural situation at its meeting in November, the Council drew attention to two main points. The first is that the production of food and other basic agricultural products in the world as a whole is barely keeping pace with the growth of population. In the last two years there has been no appreciable improvement in food consumption levels. Although marketing problems have arisen for a few commodities, aggravated to some extent by the world's balance of payments difficulties, a more rapid increase in the production of food and raw materials is still necessary.

The second is that the disequilibrium in production between regions, in relation to their population and their requirements, is growing rather than diminishing. Production has increased substantially in those countries which are already well fed, the greatest increase occurring in such surplus-producing areas as Canada and the United States. In the main importing countries, and especially in the under-developed areas of the Far East, the Near East and Latin America, the need for a further rapid expansion in the output of basic agricultural products is as urgent as ever. The food requirements of the less developed countries can be met only to a very limited extent by imports and the only real solution lies in increased indigenous production.

¹ Secretary, Canadian Interdepartmental FAO Committee.

Attention was drawn again to the decision of the Sixth Session of the Conference in 1951 that "a well-balanced increase of 1 or 2 per cent per annum in world production of basic food and other essential agricultural products in excess of the rate of population growth" was the minimum necessary to achieve any real improvement in nutritional standards. The efforts of the staff of FAO continued to be directed toward the accomplishment of this objective both through its regular activities and through the expanded program of technical assistance. In this connection, assistance has been made available by FAO in the development of national production programs and in the carrying out of agrarian reforms relating particularly to land tenure and agricultural credit facilities.

The year 1952 saw a great expansion in the technical assistance program under FAO, with the result that expenditures under this program were more than three times as much as in 1950-51, and in excess of the Organization's regular budget of five million dollars. On the basis of requests already received, the program for 1953 will be one-third greater than that for 1952. Agreements so far signed under the program cover 52 countries and provide for 890 experts. A total of 243 have already completed their work, 399 are either in the field or are being recruited and briefed for their field assignments, and 248 further vacancies will be filled as soon as possible. The technical assistance work is closely integrated with the regular activities of the five technical divisions of FAO. The Agriculture Division covers between 70 and 80 per cent of the total FAO technical assistance program and will have an average of 500 experts in the field during 1953. During 1952 these activities included the campaign against the desert locust in the Near East, and a rice-breeding project sponsored by 14 countries of the Far East. A wheat-breeding project is also being undertaken. FAO experts are at work in Austria and Yugoslavia introducing biological control methods to combat the fall webworm. In the field of animal diseases, work is being carried out in four areas on foot-and-mouth disease and rinderpest. Assistance is also being given to a number of governments in connection with irrigation projects and other land and water use problems.

The Fisheries Division had 50 experts in the field in 1952. Assistance was given in gear technology in a number of countries. Exploratory work to locate and chart latent fisheries resources is being undertaken in the Near East. FAO has also carried on work in fish farming and the extension of these activities in the Far East and other areas should help to solve the problem of protein deficiencies in these areas.

The Nutrition Division is providing assistance in the development of Nutrition Advisory Services and educational programs in nutrition and supplementary feeding with emphasis on the use of local foods. Attention is also being given to work in home economics and food technology.

The Economics Division is giving technical assistance in a number of fields including the appraisal of economic plans for agricultural development, the marketing and handling of agricultural products, agricultural prices and the general field of agricultural statistics. Much of this work is carried on through regional training centres.

The Council approved the Program of Work and Budget for 1953 submitted by the Director-General. The pressure of mounting operating costs prevented the carrying out of some projects recommended by the Conference and will require member governments to consider the need for an increase in the FAO budget.

Commodity Problems.—The FAO Committee on Commodity Problems, of which Canada is one of 14 members, held three meetings during 1952. The function of this committee is to keep the agricultural commodities situation under continuous review and to make recommendations to the FAO Council with respect to commodity problems, particularly those concerning surpluses. During 1952 the Committee gave particular attention to rice, feed grains and milk.

The Committee concluded that the shortage of rice in terms of human needs continued to be the outstanding agricultural commodity problem in the world today. In recognition of this situation the Director-General of FAO called a special meeting of interested governments on rice at Bangkok on January 5, 1953.

Concern was also expressed about the supply situation for coarse grains as related to the need for the maintenance and expansion of livestock production, and a continued heavy dependence on supplies from dollar sources was noted. Attention was also directed to a need for increased human consumption of milk. A greater use of milk solids was recommended, both from the point of view of nutrition and as a means of increasing returns to the producer.

Food Shortages and Famine.—As a result of a resolution of the Sixth Session of the FAO Conference and the Fourteenth Session of ECOSOC, the Director-General of FAO was given the responsibility of keeping watch for impending food shortages and famine, and of investigating and reporting on emergency situations at the request of governments concerned. Accordingly, FAO took note of the crop failure due to drought and other adverse weather conditions in Yugoslavia this year, and at the request of the Yugoslav Government, appointed an FAO Mission to visit the country in October-November, 1952 to appraise the situation and make recommendations for action needed. The report of the Mission indicated that because of drastically reduced yields, crop output in Yugoslavia would be 40 per cent below the average production of the previous five years, and that with a reduction in the average food standard to a level of 2,300 calories and a decrease in livestock numbers of about six per cent in pigs, fifteen per cent in poultry and one to two per cent in cattle, heavy imports of food and feedstuffs would be necessary. In view of the serious effect which a drastic reduction in livestock numbers would have on the economy of Yugoslavia, together with balance of payment problems associated with the required heavy imports of food, the Council urged all Member Governments to consider immediately any effective assistance they can render in this situation.

A resolution of the last session of the FAO Conference requested the Council "to study and explore suitable ways and means whereby an emergency food reserve can be established and made available promptly to member states threatened or affected by serious food shortages or famine". A working party studied this question and recommended the establishment of an International Emergency Famine Reserve Fund through contributions from Member Governments which could be used in cases of emergency to make food available to countries suffering from severe food shortages or famine. The Council decided to appoint another working group for further exploration of the problem, and to consider questions not dealt with already.

PUBLICATIONS OF THE ECONOMICS DIVISION

Credit Unions in Canada, 1951. O'Meara, J. E. Ottawa, October 1952. pp. 14.

This 1951 report on Credit Unions in Canada deals with growth and developments, lending operations, bond of association, comparative statistics for 1945 to 1951, and the balance sheet for 1951. The statistical information is of particular interest to credit union leaders and government officials concerned with co-operative credit.

A Farm Business Study in the Fox Valley-Eston-Kindersley Area of Saskatchewan. Riecken, T. O. and M. E. Andal. Ottawa, October 1952. pp. 42.

The purpose of this study was to determine existing and desirable patterns of land use, to study the physical and financial organization of the farm in relation to farm returns and progress, and to appraise the adequacy of the present methods of land classification. In their report the authors give particular attention to the physical and financial aspects of the farms and present a detailed analysis of the management factors affecting farm success.

Farm Organization in the Northern Okanagan Valley, British Columbia. Trevor, H. W. and D. W. Ware. Ottawa, November 1952. pp. 38.

The main purpose of this study of farm organization was to appraise the comparative advantages of different types of mixed farming and the agricultural potentialities of the mixed farming areas of the Northern Okanagan Valley of British Columbia. In their report the authors describe six different settlement areas, give a detailed farm business analysis for 231 farms located in these settlements, a comparative appraisal of seven different types of farms and an analysis of variations in and factors affecting labour earnings.

Organization and Returns of Stone Fruit and Pear Enterprises in the Okanagan Valley, British Columbia, 1949-1950. Ware, D. W. Ottawa, December 1952. pp. 46.

This study includes a description of the Okanagan Valley and its five fruit regions, comments on the farm operators and their families, and statistical data on production and plantings for the 1930-50 period and on markets and prices for the 1920-49 period. The main part of the report consists of a detailed economic analysis of farm organization, receipts and expenses, variations in returns, and of expenses, labour requirements and net returns per acre.

THE ECONOMIC ANNALIST

A BIMONTHLY REVIEW OF AGRICULTURAL BUSINESS

G. P. BOUCHER, Editor

JUNE 1953

Vol. XXIII, No. 3

CONTENTS

	Page
The Economic Situation.....	51
The Market for Farm Products in Newfoundland, 1948-1950.....W. C. Shipley	53
Price Indexes and Farm Income.....F. M. Schrader	57
Some Aspects of Land Classification in Northern Saskatchewan.....R. A. Stutt	59
Farm Ownership in Quebec.....A. Gosselin	61
Cattle Production in Western Saskatchewan and Eastern Alberta.....S. R. Burkell	65
Publications of the Economics Division.....	69
United Nations Publications.....	70
Other publications.....	71

MARKETING SERVICE, ECONOMICS DIVISION

J. F. BOOTH, Chief

Published by Authority of the Right Honourable James G. Gardiner
Minister of Agriculture

ANNUAL AND MONTHLY INDEX NUMBERS
WHOLESALE PRICES, FARM PRICES AND LIVING COST INDEXES

Year	Wholesale Prices 1935-39=100				Farm Prices of Agricultural Products 1935-39=100 (e)	Commodities and Services used by Farmers 1935-39=100		Cost of Living 1935-39=100		Consumer Price Index (1949=100) (j)
	(a) General Wholesale Index	(b) Farm Products	(c) Field Products	(d) Animal Products		(f) Equipment & Materials	(g) Eleven Factor Index	(h) Farm Living Costs	(i) Urban Living Costs	
1913.....	83.4					85.4		80.1	79.1	49.2
1914.....	85.4					90.2	85.3	82.3	79.7	49.6
1915.....	91.8					96.9	91.6	86.5	80.7	50.3
1916.....	109.8					101.7	100.5	93.7	87.0	54.2
1917.....	148.9					140.7	140.5	111.5	102.4	63.7
1918.....	166.0					164.1	160.2	131.1	115.6	72.0
1919.....	174.7					169.1	167.9	143.0	126.5	78.8
1920.....	203.2					190.1	186.5	171.3	145.4	90.5
1921.....	143.4					147.4	152.5	139.9	129.9	80.9
1922.....	126.8					124.6	134.1	127.9	120.4	74.9
1923.....	127.7					118.3	130.6	128.3	120.7	75.2
1924.....	129.5					122.3	131.9	125.5	118.8	74.0
1925.....	133.8					123.2	131.8	123.9	119.8	74.6
1926.....	130.3	144.4	158.5	130.2		119.9	130.6	121.1	121.8	75.9
1927.....	127.3	138.6	149.4	127.8		119.9	131.2	119.8	119.9	74.6
1928.....	125.6	136.3	134.3	138.2		118.3	129.3	118.5	120.5	75.0
1929.....	124.6	140.8	137.2	144.4		117.6	127.9	117.3	121.7	75.8
1930.....	112.9	119.5	105.8	133.3		105.6	117.0	113.7	120.8	75.3
1931.....	94.0	78.9	65.0	92.7		92.2	100.9	103.9	109.1	67.9
1932.....	86.9	65.5	60.4	70.5		89.3	93.3	97.8	99.0	61.7
1933.....	87.4	69.3	69.3	69.2		88.8	89.8	95.8	94.4	58.8
1934.....	93.4	83.5	80.5	86.5		96.8	95.5	97.9	95.6	59.6
1935.....	94.4	89.2	84.4	94.1	88.0	95.6	95.4	97.9	96.2	59.9
1936.....	96.7	97.9	102.2	93.7	96.9	98.7	98.1	98.3	98.1	61.1
1937.....	107.8	117.4	128.9	106.0	119.7	108.4	105.3	102.9	101.2	63.0
1938.....	102.0	102.9	100.9	104.8	105.0	101.2	101.7	101.9	102.2	63.7
1939.....	99.2	92.6	83.7	101.5	91.8	95.7	99.3	99.5	101.5	63.2
1940.....	108.0	96.1	85.4	106.7	96.8	101.8	106.8	108.5	105.6	65.7
1941.....	116.4	106.6	88.9	124.4	110.2	107.8	116.1	114.1	111.7	69.6
1942.....	123.0	127.1	109.7	144.6	133.1	119.2	131.6	119.0	117.0	72.9
1943.....	127.9	145.4	129.0	161.8	157.8	122.4	143.4	121.7	118.4	74.2
1944.....	130.6	155.3	144.5	166.1	172.4	126.0	148.0	122.8	118.9	74.6
1945.....	132.1	166.4	162.5	170.2	185.7	125.9	152.1	123.2	119.5	75.0
1946.....	138.9	179.5	177.9	181.2	204.1	128.0	157.0	127.1	123.6	77.5
1947.....	163.3	192.2	184.1	200.2	215.8	139.5	170.4	138.3	135.5	84.8
1948.....	193.4	232.1	200.6	263.7	255.8	173.1	197.4	162.8	155.0	97.0
1949.....	198.3	228.7	191.9	265.4	255.4	180.3	204.1	173.2	160.8	100.0
1950.....	211.2	236.7	191.9	281.4	260.8	189.9	210.4	177.6	166.5	102.9
1951.....	240.2	268.6	200.4	336.9	296.9	206.0	230.0	198.6	184.5	113.7
1952.....	226.0	247.2	216.9	277.5	270.4	215.8	243.1	209.8	187.5	116.5
1952										
June.....	226.3	257.9	244.4	271.4	276.6				187.3	116.0
July.....	225.3	252.8	230.2	276.8	275.7				188.0	116.1
Aug.....	223.7	242.7	208.1	277.2	268.4	212.5	245.4	204.1	187.6	116.0
Sept.....	221.9	231.9	194.8	269.1	259.3				186.5	116.1
Oct.....	220.8	227.8	192.7	263.0	252.0				185.0	116.0
Nov.....	221.4	229.3	192.1	266.5	252.9				184.8	116.1
Dec.....	221.0	228.8	189.4	268.3	252.1				184.2	115.8
1953										
Jan.....	221.5	226.4	186.4	266.4	253.1	207.7	231.7	202.2	184.4	115.7
Feb.....	220.9	222.6	182.1	263.1	249.1				184.9	115.5
Mar.....	221.9	220.8	177.3	264.3	248.4				184.2	114.8
April.....	219.6	214.5	173.0	256.0					183.9	114.6
May.....									183.6	114.6

(a) Canada. Dominion Bureau of Statistics, Labour and Prices Division. *Prices and Price Indexes*. (Mimeo.) Ottawa, Monthly.

(b) Ibid (a). Wholesale prices of products of Canadian farms.

(c) Ibid (a). Wholesale prices of grains, hay, tobacco and potatoes.

(d) Ibid (a). Wholesale prices of animals and animal products.

(e) Canada. Dominion Bureau of Statistics, Agriculture Division. *Index Numbers of Farm Prices of Agricultural Products*. (Mimeo.) Ottawa, Monthly.

(f) Canada. Dominion Bureau of Statistics, Labour and Prices Division. *Price Index Numbers of Commodities and Services Used by Farmers*. (Mimeo.) Ottawa, Jan., Apr. and Aug. Includes prices of commodities in 8 groups including farm implements, building materials, gasoline, oil and grease, feed, fertilizer, binder twine, seed and hardware.

(g) Ibid (f). Includes the 8 commodities indicated above plus tax rates, interest rates and farm wage rates.

(h) *Price Index Numbers of Commodities and Services Used by Farmers*. Includes food, clothing, fuel, household equipment, health, maintenance and miscellaneous.

(i) *Prices and Price Indexes*. Includes food, rent, fuel and lighting, clothing, home furnishings and services, miscellaneous and retail prices of commodities.

(j) Canada. Dominion Bureau of Statistics, Labour and Prices Division. *The Consumer Price Index*. (Mimeo.) Ottawa, Monthly.

THE ECONOMIC SITUATION

A decrease in domestic exports during the first quarter of the year, a continuous decline in consumer prices and lower prices for some industrial products and farm products, an increase in industrial production and in department and chain store sales, and an increase in employment, payrolls and average weekly earnings are some of the main factors which have influenced the tempo of economic activity in Canada during the first part of the year.

Domestic Exports.—Canada's domestic exports to all countries declined from \$354.6 million in March 1952 to \$307.8 million in March 1953. This represented a 13 per cent decline in value attributable to a decrease of ten per cent in volume and four per cent in prices. The March decline followed decreases of 11 per cent in February and two per cent in January and resulted in a nine per cent decrease to \$900.6 million for the first three months of the year from the \$989 million recorded for the first months of 1952. In March 1953 there were declines in shipments of wheat, wheat flour, grains other than wheat, wood pulp, farm machinery, copper, zinc, lead and fish, but increases in newsprint paper, planks and boards, aluminum, nickel, and alcoholic beverages. The decrease in wheat shipments was greatly influenced by the strike of grain handlers on the Pacific Coast.

Exports to the United States in March rose nine per cent in value to \$202.4 million from \$185.3 million in March 1952, and represented 65.7 per cent of total exports compared with 52.3 per cent in March 1952. The value of total shipments for the first quarter of the year rose from \$541.8 million in 1952 to \$564.3 million in 1953. There were notable increases in exports of non-ferrous metals, and animals and animal products. The increased exports of animals and animal products were due primarily to the removal of the United States embargo on shipments of cattle and meats from Canada.

Exports to the United Kingdom were much lower in value in March, decreasing to \$38.5 million from \$68.6 million

in March 1952 and bringing the total for the first quarter of the year to \$123.9 million from \$156.4 million in 1952. There were sharp decreases in shipments of agricultural and vegetable products, wood and paper, and non-ferrous metals, and increases in shipments of animals and animal products.

Industrial Production.—According to the *Canadian Statistical Review* the index of industrial production for February (1935-39=100) stood at 239.6 compared with 231.8 in January, 218.6 in February 1952, and 212.4 in January 1952. The average for the two months increased from 215.5 to 235.7. The rise in manufacturing is attributed, in part, to the increased production which has issued from recent investment programs and the incentive of strong consumer purchases. Production and sales gains were recorded for many non-durable goods and, in general, the output of durable goods averaged considerably higher in January and February than it did in the corresponding months of 1952. The continued high level of house building activity encourages expectations of satisfactory sales of durables. Building starts from January 1 to the end of February were 6,362, exceeding the very low levels of the corresponding period of 1952 by 71 per cent. Completions in the first two months of 1953 totalled 12,262, 2,803 more than in the first two months of 1952—a gain of nearly 30 per cent. The relatively large number of starts late in 1952 virtually assures a high completion rate for some months to come.

Department Store Sales.—Department store sales rose 13.6 per cent during the week ending April 25 compared with the corresponding week last year. Increases were recorded in all sections of Canada. Alberta led with a rise of 21.8 per cent and was followed by the Maritimes with a gain of 18.8 per cent, Saskatchewan 18.3 per cent, Ontario 14.3 per cent, Manitoba and British Columbia 11 per cent each, and Quebec 7.7 per cent. Department stores boosted their sales by an estimated ten per cent in March compared with March 1952 and first quarter

sales were up nine per cent. Value of inventories held at the beginning of the month was up almost 17 per cent.

All provinces shared in this increase. In March the gains ranged from four per cent in British Columbia to 19.6 per cent in Saskatchewan and in the first quarter of the year from 5.3 per cent in British Columbia to 14.3 per cent in Alberta.

Employment.—Employment in Canada's non-agricultural industries had declined slightly from February to March but was higher at the beginning of March this year than a year previously. Payrolls and average weekly earnings were higher at the beginning of March than at the beginning of February and the beginning of March 1952.

The advance index number of employment reached 181.8, a new peak for March, compared with 182.5 for February 1 and 178.0 for March 1, 1952. The payrolls index rose to 445.0 from 441.1 on February 1 and 409.0 a year before, and average weekly wages and salaries to \$57.47 from \$56.72 and \$53.95.

Prices.—The consumer price index declined 0.2 per cent from 114.8 to 114.6 between March 2 and April 1. This marked the fifth consecutive monthly decline and the index then stood at the lowest level since July 1951. The food prices index declined to 110.9 from 111.6 and reflected lower prices for fresh meats, especially beef, veal and lamb, and potatoes and butter.

The composite index number of wholesale prices advanced from 220.9 to 221.9 between February 14 and March 14. The 1953 March index was down about four per cent from a year earlier. The vegetable products index rose from 200.9 to 201.5; firmness for grains, vegetable oils and tea, coffee and cocoa outweighed weaknesses in potatoes, onions, rubber and livestock feeds. In the animal products group scattered decreases, mainly in livestock—except hogs, beef carcass, sausage and butter—outweighed advances in fish, hogs, fresh and cured pork and eggs and lowered the index from 239.0 to 238.7.

Industrial material prices at wholesale continued to decline in April. The index for those prices fell from 236.2 in the week of March 27 to 231.3 in the week of April 24.

The index number of farm prices of agricultural products (1935-39=100) stood at 248.4 for March as compared with

249.1 for February. A substantial drop in potato prices and a slight decline in grain prices more than offset the increases recorded for other commodity groups, particularly poultry and eggs.

Egg Output.—Canada's egg production was estimated at 102,265,000 dozen for the first quarter of 1953, or 1,187,000 dozen above the output for the corresponding period of 1952 even though a smaller production was recorded in March 1953. Production was estimated at 36,294,000 dozen for March, well above the revised February estimate of 31,900,000 dozen but 1,298,000 dozen below the March 1952 output of 37,592,000 dozen.

During March Canadian producers sold an estimated 26,400,000 dozen eggs for market compared with the revised February estimate of 24,400,000 dozen and 29,100,000 dozen during March 1952. An estimated 72,266,000 dozen were sold during the first quarter of the year compared with 73,227,000 dozen in the first quarter of 1952.

International Wheat Agreement.—In April a majority of the delegates to the International Wheat Council in Washington voted to renew the International Wheat Agreement (Great Britain did not sign). The 46 participating countries have until July 15 to ratify the revised agreement.

The new price will range from a maximum of \$2.05 a bushel to a minimum of \$1.55 instead of the \$1.80-\$1.20 range prevailing under the old agreement. Annual export quotas were assigned as follows: United States, 270 million bushels; Canada 250 million; Australia 75 million; and France 367 thousand bushels. Import quotas range from 177 million bushels for Britain and 55 million bushels each to Germany and India to small amounts for Honduras and Iceland.

Co-operative Credit.—A Co-operative Credit Bill "to provide for the supervision of central co-operative credit associations that may be incorporated by Parliament" received second reading in the House on April 17 and was referred to the Standing Committee on Banking and Commerce. The bill provides for the establishment of co-operative credit associations operating in more than one province, under the supervision of the superintendent of insurance.

THE MARKET FOR FARM PRODUCTS IN NEWFOUNDLAND 1948-1950

W. C. SHIPLEY

The development of agricultural production and marketing in Newfoundland is far from complete. Although factors such as climate and soil would seem to preclude the establishment of a large scale agricultural economy, an increase in production to supply a larger proportion of the home market demand appears quite possible. Accordingly, Newfoundland farmers, encouraged by the Provincial government, are directing their efforts toward greater production of the commodities which are well adapted to Newfoundland conditions and which can compete successfully with the non-local products.

In the summer of 1950 the Economics Division of the Canada Department of Agriculture, at the request of and in co-operation with the Department of Natural Resources of Newfoundland, undertook a marketing study in that province. Specifically, the project was designed to determine the market for farm products in Newfoundland over the two-year period April 1, 1948 to March 31, 1950. This was the first study of its type undertaken in Canada's newest province. Other objectives of the study were:

- (1) to determine what proportion of the total market requirements for the two-year period ending March 31, 1950 was produced within Newfoundland and what proportion was supplied from other sources;
- (2) to make a comparison between the market, together with sources of origin of farm products, as it existed during the twelve months immediately preceding Newfoundland's entry into Confederation and the twelve months immediately following Confederation.

NATURE OF THE AREA

Location.—The Island of Newfoundland, triangular in shape, is situated at the mouth of the Gulf of St. Lawrence. On the north the Strait of Belle Isle separates it from the coast of Labrador, only twelve miles distant at the narrowest point. On the southwest, Cabot Strait separates the Island Province from Cape Breton Island by some 98 miles. Newfoundland has a total area of approximately 42,700 square miles, which is nearly half the size of the United Kingdom. The Island's rocky coastline is pierced with numerous coves and inlets and on the east coast, particularly, there are many large bays which provide sheltered harbours. The coastline of the Island is estimated to have a total length of about 6,000 miles.

Population.—The population of Newfoundland (not including Labrador) was 353,526, according to the 1951 Census. Of this total, 154,795 were classed as urban dwellers and the remainder as rural. The metropolitan area of St. John's, the capital, with its 67,749 residents and the 10,276 persons living in Corner Brook, the second city of the Island, made up slightly over 50 per cent of the urban population. Approximately 42 per cent of the Island's total population is located on the Avalon Peninsula, in the south-east corner of the province.

Agriculture.—Up to the present time, agriculture in Newfoundland has not been important commercially. Much of the farming on the Island is of the subsistence type and is carried on in conjunction with the fishing industry. Newfoundlanders are by tradition fishermen and since the fishing and growing seasons coincide, to a great extent, agricultural pursuits are limited. However, the production of vegetables, and to a lesser extent meat and dairy products, to help supply the needs of these people, points up the real value of this type of farming. Although good farming land is not abundant in Newfoundland there are areas which have productive soil. These are principally the Codroy and Humber Valleys on the west coast and the St. John's area on the Avalon Peninsula. It is mainly in these three regions that the full-time farmers have settled. The 1951 Census of Agriculture indicated that there were 3,626 farms in Newfoundland but only 780 of these were classed as commercial.

Climate.—Newfoundland has a temperate, marine climate but is cooler than other coastal areas in the same latitude because of the cold Labrador current which sweeps along the east and west coasts. The summer season is short and inclined to be cool although brief warm spells do occur. The winter is long but is not very severe and sub-zero temperatures are not common in the coastal areas. Although the frost-free period on the Island compares favourably with that of many other

parts of Canada, the lack of steady sunshine and existence of lower night temperatures somewhat retard growth during the season. Precipitation is abundant and is fairly evenly distributed throughout the year.

Transportation.—The single track, narrow-gauge railway line which winds its way some 547 miles across the Island from St. John's on the east coast to Port aux Basques on the west coast is the most important transportation link within the Island. Port aux Basques is connected with North Sydney on Cape Breton Island by regular ferry service. In addition to the main line service, branch lines on the Avalon Peninsula connect the main centres with St. John's. Other branch lines join the north-east coast ports of Bonavista and Lewisporte with the main line.

Water transportation is naturally of great importance to the inhabitants of the Island and this importance is emphasized by the fact that a large proportion of the people live in coastal settlements. Steamship services operated by the railway provide regular calls at these "outports" and are timed to meet the needs of the people. Private schooners used in the fishing industry also provide invaluable service in carrying supplies to smaller coastal settlements. Steamship connections with ports in Canada, the United States and Europe are supplied by various companies.

As yet, road transportation has not developed to an adequate degree. On the Avalon Peninsula, however, considerable attention has been given to road building. The paved highway portion is limited and confined to the St. John's area but there are hundreds of miles of gravel-surfaced roads joining the towns of the Peninsula. The road work which is at present in progress will link the existing routes on the Avalon Peninsula with those extending from Gander, Grand Falls and Corner Brook to form a trans-island route from St. John's to Port aux Basques.

Newfoundland's Gander airport occupies an important position on the air route between North America and Europe, and Torbay airport near St. John's is the eastern terminus for Trans-Canada Airlines domestic flights.

EXTENT OF THE MARKET

Market Receipts.—The total value of agricultural commodities sold through commercial channels from April 1, 1948 to March 31, 1949 amounted to almost \$18·8 million. For the following year (the first year after Newfoundland's entry into Confederation) this total rose to approximately \$21·4 million.

In terms of quantity (Table 1), vegetables were the most important commodity sold in each of the years under review as over 56 million pounds were marketed in 1948-49 and over 63·7 million pounds the next year. On the all-important dollar basis, however, meats far surpassed vegetables in both years. In 1948-49 the total value of meats sold amounted to almost \$8·7 million and in 1949-50 this value increased to \$10·5 million.

Dairy products were of considerable importance to the market during the two-year period. Although the total weight sold dropped from about 19 million pounds in 1948-49 to 17·8 million in 1949-50 the total value increased from \$3,259,000 to almost \$3,284,000. Canned milk was the most important single item in this group.

Fruit was another important commodity sold on the Newfoundland market. Although the 14·9 million pounds sold in 1949-50 represented a drop from the 16·8 million pounds marketed the previous year and the dollar value declined slightly from the 1948-49 level of nearly \$1·4 million, the amounts involved are substantial.

Second only to vegetables in quantity sold, feed and feed grains command an important position on the market. Slightly over 35 million pounds were sold in 1949-50 which represented an increase of approximately six million pounds over sales in the previous year. Because of lower prices, the increase in value over the 1948-49 level of nearly \$1·2 million was quite small.

Quantities of hay sold were substantial although there was a drop from almost 7,300 tons in 1948-49 to 5,800 tons the following year. Because of reduced prices the decline in dollar value was somewhat larger, proportionately, than the decline in tonnage.

Other farm products sold were of lesser importance although the value of livestock marketed exceeded \$1 million in 1949-50.

From 1948-49 to 1949-50 the total quantity of vegetables, meats and feeds sold increased while that of fruit, dairy products and hay decreased. On a dollar basis, meats, dairy products and feeds increased while vegetables, fruit and hay declined slightly.

Commercial Marketings of Local Commodities.—The figures appearing in Table 1 under the heading of "Local" are based on information obtained from a sample of Newfoundland farmers. Their sales to wholesalers, retailers and householders over the two-year period commencing April 1, 1948 were obtained and then expanded to give the amounts shown in the tables.

Vegetables represented the main commodity group on a weight basis. Over 20 million pounds valued at some \$594,000 were sold in 1949-50 as compared with nearly 20·4 million pounds, worth \$675,000, the previous year. Meats and shell eggs were also important to the local marketings and in 1949-50 their values exceeded \$173,000 and \$122,000 respectively.

Although only small amounts of local feed grains were available for marketing, sales of hay approached 480 tons in 1949-50.

In 1949-50 approximately 32 per cent of the market demand for vegetables, 11 per cent of the demand for eggs and 51 per cent of the live poultry requirements were supplied through sales of the local product; the preceding year local supplies of vegetables, eggs and live poultry amounted to 36 per cent, 12 per cent and 51 per cent respectively.

Table 1.—Commercial Marketings of Agricultural Commodities in Newfoundland 1948-49 and 1949-50

Commodity	Unit	Non-Local		Local		Total Marketings	
		1948-49	1949-50	1948-49	1949-50	1948-49	1949-50
Fruit.....	000 lb.	16,822	14,897	3	3	16,825	14,900
Vegetables.....	000 lb.	35,757	43,595	20,395	20,131	56,152	63,726
Meats.....	000 lb.	27,953	29,439	455	452	28,408	29,891
Dairy products ^a	000 lb.	18,952	17,795	13	14	18,965	17,809
Dressed poultry.....	000 lb.	554	1,222	—	—	554	1,222
Eggs (shell).....	000 doz.	898	1,265	128	161	1,026	1,426
Eggs (powdered and frozen).....	000 lb.	25	27	—	—	25	27
Live poultry.....	Head	29,787	25,660	30,754	25,905	60,541	51,565
Livestock.....	Head	7,643	10,258	433	512	8,076	10,770
Livestock products.....	000 lb.	15	2	2	3	17	5
Feed and feed grains.....	000 lb.	29,062	35,055	3	14	29,065	35,069
Hay.....	Tons	6,887	5,345	411	479	7,298	5,824
Seed.....	000 lb.	202	657	—	—	202	657
Honey.....	000 lb.	7	4	—	—	7	4

^a Fluid milk not included.

Commercial Marketings of Non-Local Commodities.—Agricultural commodities shipped into Newfoundland from other parts of Canada, the United States and other countries constituted the bulk of the market requirements for the period April 1, 1948 to March 31, 1950. Practically all of the important items such as fruits, meats, dairy products and feeds came from sources outside the Island. Only in vegetables, eggs and live poultry did the local product form an important part of the market requirements.

Quantities of vegetables shipped into Newfoundland surpassed those of all other farm products. In 1948-49 close to 35·8 million pounds were sold and in 1949-50 this amount increased to almost 43·6 million. Dollar value increased to approximately \$1,554,000 in the second year. In 1949-50 meats exceeded \$10 million and represented almost one-half of the total value of all products sold.

Dairy products, consisting mainly of canned milk, butter and cheese, amounted to almost 19 million pounds, valued at some \$3·3 million in 1948-49. The following year the quantity decreased to 17·8 million pounds but the overall value increased slightly. Quantities of fruit marketed showed a somewhat similar drop from 16·8 million pounds to about 14·9 million and the value dropped from approximately \$1,391,000 to \$1,308,000.

Commercial feed and feed grains ranked next to vegetables in quantity sold. In 1949-50 sales increased by nearly six million pounds to reach just over 35 million

pounds. The 1949-50 value of some \$1,239,000 was only slightly above that of the previous year because of reduced prices of feed grains. Quantities of hay sold declined from some 6,887 tons in 1948-49 to 5,345 tons in 1949-50.

ORIGIN OF NON-LOCAL COMMODITIES

The origin of farm products shipped to Newfoundland from April 1, 1948 to March 31, 1949 and for the twelve-month period immediately following is presented in Table 2. It must be pointed out, however, that not in all cases was the particular

Table 2.—Origin of Major Non-Local Commodities 1948-49 and 1949-50

Origin	Year	Fruit	Vegetables	Meats	Dairy Products	Feed and Feed Grains	Hay
				— 000 lb. —			Tons
Prince Edward Island.....	1948-49	11	6,651	101	165	918	188
	1949-50	190	21,344	927	311	526	913
Nova Scotia.....	1948-49	5,525	11,149	7,864	3,930	8,150	2,562
	1949-50	7,344	12,217	7,663	4,063	4,580	1,510
New Brunswick.....	1948-49						152
	1949-50	83	759	1,767	1,032	586	2,868
Quebec.....	1948-49	510	2,780	2,845	2,251	13,955	2,202
	1949-50	766	1,930	3,797	9,997	17,978	24
Ontario.....	1948-49	76	157	1,020	139	168	
	1949-50	306	4,833	2,679	2,266	9,086	14
Manitoba.....	1948-49						
	1949-50		60	280	6	2,211	
Saskatchewan.....	1948-49						
	1949-50					25	16
Alberta.....	1948-49			106			
	1949-50						
British Columbia.....	1948-49	137					
	1949-50	1,688	57				
Canadian Origin Not Known.	1948-49	1,702	10,076	4,168	2,534	3,867	1,756
	1949-50		10				
Canada.....	1948-49	7,961	30,813	15,998	9,019	27,058	6,860
	1949-50	10,377	41,210	17,219	17,675	34,992	5,345
United States.....	1948-49	8,570	4,333	11,139	9,635	1,985	27
	1949-50	4,405	2,139	12,218	20	63	
United Kingdom.....	1948-49	18	164	7	60	17	
	1949-50		12	2	1		
Other Foreign.....	1948-49	273	447	809	238	2	
	1949-50	115	234		99		
Total (Foreign).....	1948-49	8,861	4,944	11,955	9,933	2,004	27
	1949-50	4,520	2,385	12,220	120	63	
Grand Total.....	1948-49	16,822	35,757	27,953	18,952	29,062	6,887
	1949-50	14,897	43,595	29,439	17,795	35,055	5,345

commodity produced in the province or country shown but was shipped from there direct to Newfoundland. The province of Nova Scotia, for example, did not produce all of the various commodities as indicated in the table. Much of the fruit (particularly citrus) was grown in the United States, exported to dealers in Nova Scotia and then shipped to Newfoundland. The source of the survey data, however, did not in each instance indicate the exact point of origin. This type of discrepancy does

not alter the significance of the figures pertaining to the other provinces and foreign countries to the same degree. In most cases the extent to which each supplied the Newfoundland market is indicated in the table.

There was a sharp drop in imports from the United States, the United Kingdom and other countries from 1948-49 to 1949-50. Fruit imports declined from about 8.9 million pounds to 4.5 million, vegetables from some 4.9 million pounds to 2.4 million and dairy products from nearly 10 million pounds to only about 120,000 pounds. Feed and feed grains shipped into Newfoundland from these countries declined from over two million pounds to 63,000 pounds. Imports of meats increased slightly although they did not rise much above the 1948-49 level of almost 12 million pounds.

The trend in shipments of agricultural products from other provinces of Canada contrasted sharply with that followed by exports from other countries. In 1949-50 quantities of fruit, vegetables, dairy products and feeds, except hay, rose considerably above those for the previous twelve-month period. Fruit shipped increased from approximately eight million pounds to over ten million, vegetable shipments rose from just under 31 million pounds to over 41 million, dairy products almost doubled from the 1948-49 level of nine million pounds and feed and feed grains increased from some 27 million pounds to almost 35 million. Meats from various parts of Canada increased in a somewhat similar manner to those from other countries. The 1949-50 level of slightly over 17 million pounds represented an increase of just over one million pounds from the previous year.

Supplies of agricultural products shipped to Newfoundland from Nova Scotia, Quebec and Ontario accounted for a large proportion of the market requirements. Prince Edward Island also shipped sizeable amounts of each commodity, those of vegetables predominating; they rose from 6.7 million pounds in 1948-49 to over 21 million in 1949-50. Shipments of fruit, principally apples, from British Columbia increased from approximately 137,000 pounds in 1948-49 to almost 1.7 million pounds in 1949-50.

Summary.—1) The total value of agricultural commodities sold commercially in Newfoundland from April 1, 1949 to March 31, 1950 amounted to approximately \$21.4 million of which slightly under \$1 million was spent on farm products of Newfoundland origin. In the previous twelve-month period total commercial marketings were valued at some \$18.8 million, products from Newfoundland having about the same value as in 1949-50.

2) Vegetables were the most important commodity grown and sold by the Newfoundland farmer over the two-year period; local growers supplied 36 per cent of the total market demands in 1948-49 and 31 per cent in 1949-50.

3) Although the market demand for farm products increased in Newfoundland during the twelve-month period immediately following Newfoundland's entry into Confederation, imports from the United States, the United Kingdom and other countries dropped considerably during this period. In sharp contrast, shipments from other provinces of Canada to Newfoundland increased by sizeable amounts for the year beginning April 1, 1949. Lower prices to the Newfoundland purchaser, in some instances brought about by reduced transportation rates and the lifting of certain duties, probably contributed to this increase in agricultural shipments from the other provinces.

PRICE INDEXES AND FARM INCOME

F. M. SCHRADER

In the face of declining prices for agricultural products, costs of goods and services used in production are continuing to increase. Although this may appear to indicate a "squeeze" on agriculture and perhaps even an agricultural depression, a closer examination of the meaning of price indexes reveals that this is not a new or extraordinary situation.

The indicators of declining prices received in agriculture and the indicators of increasing costs of production are indexes of prices per unit of commodities and services. Although indexes are useful for showing changes in price per unit, they do not reveal changes in net returns to agriculture, and it is net returns to farmers as individuals and as a group which is the important measure. An examination of the method of constructing index numbers and the meaning of these indicators is necessary for a full interpretation of the situation which has developed.

In addition, an examination of the forces influencing prices will show that the "squeeze" of costs on prices received is not peculiar to the year 1952. It will be seen to be a force which is always present for individuals and groups of farmers as well as other businessmen.

Prices Received by Farmers.—The levels of and month-to-month changes in prices received by farmers are measured by the index¹ of farm prices of agricultural products. This is a single figure representing an average for prices of the numerous products raised on Canadian farms. Prices of these commodities are quoted in terms of different units such as pounds, hundredweight, bushels, dozen, and boxes. Some commodities are more valuable per unit than others. Some are produced in greater quantity and are therefore a more important source of farm income than others. In order to average the prices of commodities quoted in different units and of different importance in production, the individual prices were weighted according to the average production of the period 1935 to 1939. For any given year the index is the base period production valued at current prices compared with the base period production valued at base period prices.

An index computed in this manner can only indicate average changes in price per unit. It cannot indicate changes in income because production of the current year is not considered. A price index would tend to understate income because low prices are often a reflection of high output. Total income from the sale of this higher output, even at lower prices, may be as great as or greater than the total income from the sale of a smaller output at somewhat higher prices. The index for a year of lower prices and higher output is computed from only the base year price and production, and the current year's price. For example, in 1940-41 the average farm price of wheat was 57 cents a bushel, 11 cents less than in the base period 1935-39. However, because production in 1940-41 was larger than in the base period (540 million compared with 312 million), the total farm value of wheat was \$310 million in 1940-41 as compared with an average of \$211 million in the base period.

Prices Paid for Commodities and Services Used by Farmers.—The level and change in the level of prices paid by farmers is measured by the index¹ of prices of commodities and services used by farmers. This index, like the index of prices received by farmers, indicates changes in the average price per unit of a fixed number of commodities and services used in farm production. The weight ascribed to each price is the same year after year and is based upon a survey of farm costs carried out in 1938. It is a measure of changes in the average price per unit of items which entered farm costs in 1938. It is not a measure of actual costs of production.

Farm Income from the Sale of Agricultural Products.—The gross cash income¹ from the sale of farm products is the total value of all farm products sold during a given period. It is computed by multiplying the price per unit by the total number of units of each commodity sold at those prices. In contrast, the index of farm prices is the current price per unit multiplied by the total number of units sold in the base period compared with the base period price per unit multiplied by the total number of units sold in the base period.

Net farm income¹ is computed by deducting costs of production from gross cash income. Costs of production are determined in the aggregate by estimating the total quantity of goods and services used in production and multiplying by prices per unit. These estimates of total costs of production differ from the index of commodities and services used by farmers. The cost of production estimate is based on prices and quantities of the same year. In contrast, the index of costs is a comparison of current prices of base period quantities with base period prices and quantities. Thus the estimate of cost of production reflects farmers' efforts to adjust costs to new conditions. An example of this is the introduction of labour saving devices when wage rates are high.

During the past decade total farm cash income increased more rapidly than total costs of operation. As a result, net farm income increased. During the prewar period 1935-39 it averaged \$325 million a year. By 1948 it was \$1.7 billion, more than five times the prewar average. In 1950 it dropped to slightly under \$1.5 billion but rose again to the \$2 billion level in 1951 and 1952.

¹ Computed and published by the Dominion Bureau of Statistics, Ottawa, Canada.

SOME ASPECTS OF LAND CLASSIFICATION IN NORTHERN SASKATCHEWAN

R. A. STUTT

Land is used to satisfy some of the most important human wants; its use is a social process involving the relation of man and his institutions to the land itself. In suggesting a classification of land in Northern Saskatchewan according to its highest or most desirable use one must consider the social objectives. Agricultural economists may wish to develop a set of principles or rules which could be used as a guide in the formulation of private and public policy for the control and use of natural resources. This guide would also be useful to those who are concerned with land administration problems. The main problem is to reconcile the various uses of unoccupied crown lands in the best interests of the public.

More specifically, the land economist has to study problems involving a choice among alternative uses for land; use for agriculture, forestry, wildlife, recreation, protection of the headwaters of streams and rivers or for a variety of purposes. He is also concerned with the use of mineral and water resources and the use of land for the development of transportation and urban facilities.

The principle of comparative advantage must be kept in mind in arriving at judgments concerning changes in patterns of land use that will maximize social net returns, and alternative opportunities for people now living in the area must be given careful study.

The land use pattern should be so designed as to ensure adequate returns to the land users. These returns should (a) exceed operating costs, including capital replacements incident to the land use pattern; (b) insure the maintenance or improvement of the land; (c) allow the various classes of society to obtain an income sufficient to meet their levels or standards of living; (d) meet the costs of required public services from income within the area or from outside incomes if the anticipated benefits warrant the cost of the services. The general objective of economic land classification is the projection of a trend in patterns of land use which will increase the *net* returns to the users of the land.

In planning the use of the land, account must be taken of its physical characteristics, of the economic forces which influence its value, and of the social institutions prevailing in the community.

The physical characteristics will determine the kinds and amounts and the quality of products that can be derived from the land. The economic location, on the other hand, will have a marked influence on costs of production and marketing and together with the physical properties of the land will determine the size of the farm returns. Anticipated farm returns or estimated chances for financial success motivate the farmer's decisions and are one of the most common criteria used in land classification.

The range of agricultural land use possibilities is determined by the physical inventory and the agronomic evaluation of the soil types. The economic classification is a problem of choice among alternative uses. Its solution lies in ascertaining, within the limits of agronomic adaptation, the highest economic use of land resources under existing and predictable economic, social and technological conditions. The economic aspect of land classification is much more dynamic than the physical aspect, in that it is based not only on the more stable physical characteristics of the land, but also on economic conditions which are subject to changes from year to year.

In making a choice among various types of land use the individual operator appraises the comparative costs and returns associated with these different types of land use. Because land is only one of the factors of production, the cost of production is not determined solely by land, and therefore the highest economic use of land is determined by the relationship of the land with various combinations of labour and capital. Total costs of production in relation to prospective returns will be the final determinants of the choice made among possible uses.

Society is interested in, and in many ways exercises some control over the individual's choice of land use. Public interest is concerned with social costs and returns, distribution of the returns, and the incidence of the costs over a longer period than are individual or group interests. Regarding land classification, public interest is most commonly expressed in terms of resource conservation and of standards and costs of public services as influenced by settlement policies and patterns.

There are undoubtedly cases in which exploitative use of land is of greater advantage to the individual whereas conservative use is in the best interests of the public. In Northern Saskatchewan there are tracts of unoccupied land physically adapted to farming and large enough to permit the economic operation of a group of farms but of such a small total area and so isolated that the provision of public services would result in excessive costs to the public.

An economic classification of unoccupied and forested land for agricultural use can be based on the budget approach. This method usually starts with a land and soil inventory; an appraisal of the climatic environment; assumptions as to the adaptability of the main crops and livestock; and estimated yields. Use should be made of the soil and climatic data, legal survey of the location, aerial photographs and occupancy data. Assumptions as to the adaptability of crops are based on agronomic information provided by research agencies such as the Experimental Farms Service and also from economic land settlement and farm business studies conducted in adjacent occupied farm fringe areas. Information on crop yields in comparable areas can be obtained from these and other sources.

Regarding prices to be used in estimating cash receipts and costs, care must be taken to portray the price relationships that have prevailed in recent years and future price relationships and levels that appear to be within a reasonable range of probability. Future prices, in effect, may go either up or down in relation to each other and prices of all farm products may fluctuate widely over a period of some years. In spite of the difficulties encountered in attempting to forecast these prices they should be given as much weight as historical prices in budgeting work. Thus, it may be advisable to work out a few alternative budgets, based on different price situations, including for example, assumed relative prices, five- or ten-year average prices, low prices for the main commodities produced on the farm, and a general level of low prices for all commodities. The farmer will also find it especially rewarding if he prepares budgets for different ways of operating his farm; that is, if he compares alternative lines or methods of production. This type of planning will help to suggest: (1) what kinds and acreages of crops should be grown; (2) what kinds and numbers of livestock should be raised; and (3) the amounts of labour required with different kinds of power and equipment. The budgeting technique will also provide some indication of the amount of money that may be invested in a building or a piece of equipment. The budgeting technique can be applied to a farming area as well as to an individual farm. People concerned with the development of a particular area will use it as a guide in determining the type or types of land use—agricultural, forest or other—best adapted and most likely to contribute to the optimum development of the area. Budgeting data and other available information may then be compared with information pertaining to actual farms of various sizes and types of tenure in areas with similar physical characteristics, and where economic conditions may be presumed to give a reliable preview of the conditions to be expected in the area of planned development. For Northern Saskatchewan, soil and economic surveys provide an abundance of data on soil and climatic conditions, sources, supply and quality of water, land utilization and productivity, sizes and types of farms, sources of farm receipts and farm expenses, farm indebtedness and farm capital, and other aspects of farm business organization.

But in planning the use of land on an area basis one must also take into account a variety of other uses such as use for the preservation of wildlife, the exploitation, maintenance, conservation or improvement of mineral and water resources, forest and recreational land, the development of transportation facilities and the provision of land for urban development. In Northern Saskatchewan the main consideration other than agricultural use is forest use. The forest potential must be evaluated in terms of sustained yield production and anticipated net returns.

Regarding agricultural use, the main factors to be considered in land classification in Northern Saskatchewan are the following:

- (a) Agricultural potentialities—the net income-producing capacity of the land under typical farm organization, considering:
 - (i) Physical productivity (related to soil rating);
 - (ii) Type of farming adaptation;
 - (iii) Comparative operating, capital maintenance and soil maintenance costs.

- (b) Joint use potentialities:
 - (i) Forest grazing;
 - (ii) Complementary farm and forest use—where an operator might have a farm business and a small forest unit;
 - (iii) Supplementary forest income used for farming—work in lumber camps, mills and other outside forest work or income.
- (c) Costs of conversion from forest to agricultural use:
 - (i) Clearing, breaking and land development costs;
 - (ii) Waiting and ripening costs—loss of alternative forest income during establishment for agricultural production use.
- (d) Social costs of agricultural settlement—related to minimum size of settlement areas, distance from established facilities and settlement:
 - (i) Costs of transportation, service and social facilities;
 - (ii) Amount of tax revenue providing self-sustaining settlement;
 - (iii) Net social cost of agricultural settlement.
- (e) Interrelation of agriculture with alternative uses:
 - (i) Effects of agricultural settlement on wild life, and recreational resources on the settlement fringe;
 - (ii) Effects of agriculture on costs of forest production;
 - (iii) Other beneficial or disadvantageous effects of agriculture on non-agricultural use.

In conclusion it may be said that in planning the development of an individual farm or an agricultural area one must aim at securing “the highest-profit combination of uses”¹ for different parcels of land.

One of the best methods of finding this optimum combination of uses is the budget method. Errors may be made in forecasting market prices and technological changes but the budget method is less likely than most other methods to lead to poor judgment in the planning of land use.

FARM OWNERSHIP IN QUEBEC

A. GOSSELIN

This article, the third of a series on farm ownership in Quebec,² deals with farm investment in 1950 as compared with investment at the time of farm acquisition, capital needed to acquire and maintain farm ownership, transfer of ownership to the next generation, and sources of credit available to prospective farm owners.

Farm Investment in 1950 and When Acquired.—The estimated value of real estate, equipment and livestock on 560 farms in 1950 and the investment at the time the farms were acquired are given in Table 1. On the basis of 1950 values, investment in real estate averaged \$8,631 per farm; machinery and equipment \$2,403; livestock \$2,459; or \$13,493 for total investment which is about double the \$6,681 invested at time of acquisition. Compared with values at time of acquisition, this represents an average increase in investment of 83 per cent for real estate, 146 per

Table 1.—Estimated Average Farm Investment in 1950 Compared with That at Time of Acquisition, 560 Quebec Farms

Period of Acquisition	Farms Reporting	Estimated Average Investment							
		Land and Buildings		Machinery and Equipment		Livestock		Total	
		When Acquired	1950	When Acquired	1950	When Acquired	1950	When Acquired	1950
		— dollars —							
Before 1915.....	38	2,965	8,697	443	2,125	450	2,284	3,858	13,106
1915-1929.....	166	5,063	9,600	910	2,826	932	3,032	6,905	15,458
1930-1939.....	169	4,090	8,531	908	2,450	838	2,455	5,836	13,436
1940-1950.....	187	5,324	7,696	1,190	2,210	1,280	2,067	7,794	11,973
All Farms.....	560	4,714	8,631	977	2,403	990	2,459	6,681	13,493

¹ Black, J. D. *Introduction to Economics for Agriculture*. New York, The Macmillan Company. 1953. p. 585.
² *The Economic Annalist*, October 1952, pp. 112-115 and February 1953, pp. 11-14.

Table 2.—Percentage Distribution of Farms According to Value of Machinery, Livestock, Real Estate and Total Investment in 1950, 560 Quebec Farms

Range in Value	Machinery and Equipment	Livestock	Range in Value	Real Estate	Total Investment
	— per cent of farms —			— per cent of farms —	
Less than \$1,000.....	12.6	7.4	Less than \$5,000.....	19.3	2.7
\$1,000 — 1,999.....	28.4	31.0	\$ 5,000 — 9,999.....	48.2	28.1
\$2,000 — 2,999.....	23.2	30.8	\$10,000 — 14,999.....	20.7	33.5
\$3,000 — 3,999.....	13.8	13.5	\$15,000 — 19,999.....	8.1	20.9
\$4,000 — 4,999.....	12.9	8.0	\$20,000 — 24,999.....	1.6	8.8
\$5,000 — 5,999.....	4.9	4.1	\$25,000 — 29,999.....	1.4	2.7
\$6,000 and over.....	4.2	5.2	\$30,000 and over.....	0.7	3.3
Total.....	100.0	100.0	Total.....	100.0	100.0

cent for equipment and 148 per cent for livestock. The comparative figures presented in Table 1 also indicate that the greatest increases were experienced by those farms which had been owned by the operators for the longest periods.

The increase in the market value of the farms since their acquisition is due partly to the high level of prices prevailing in 1950 and partly to increases in the size of farms and to improved buildings and greater mechanization. A large proportion of the owners started farming with a low investment in machinery, equipment and livestock. They gradually increased these types of investment and some owners also acquired additional land and built a new house, a new barn or other farm buildings.

Farms acquired before 1915 averaged 98.7 acres per farm when acquired and 161.3 acres in 1950. Smaller increases were recorded for each of the other groups according to the length of time since acquisition. The average size at the time of acquisition was 109 acres as compared with 127.4 acres in 1950.

Further information on the estimated investment on Quebec farms in 1950 is presented in Table 2. More than half of the farms had an investment in machinery, equipment and livestock ranging between \$1,000 and \$3,000. Real estate was valued at less than \$5,000 on 20 per cent of the farms and from \$5,000 to \$10,000 on 48 per cent of the farms. Total investment amounted to less than \$10,000 on close to one-third of the farms, ranged from \$10,000 to \$15,000 on another third and exceeded \$15,000 on the remainder of the farms.

In addition to the capital required to buy, equip and stock a farm, the owner-operator needs operating capital to pay for his hired labour and purchase fertilizers, spray materials, feed, seed and other supplies. The amount of operating capital required depends on the type of farming and the size of the farm business; it may vary from a few hundred to several thousand dollars a year.

Table 3.—Percentage Distribution of Farms According to Expenditures on Buildings for Improvements, Remodelling and New Construction since Acquisition, 544 Quebec Farms

Range in Amount of Expenditures on Buildings	240 Farms Acquired before 1930		304 Farms Acquired from 1930 to 1950	
	Per Cent of Farms	Group Average	Per Cent of Farms	Group Average
	%	\$	%	\$
Less than \$1,000.....	18.7	539	25.0	579
\$1,000 — 1,999.....	24.2	1,328	25.3	1,290
\$2,000 — 2,999.....	20.0	2,305	20.4	2,237
\$3,000 — 3,999.....	14.2	3,236	12.2	3,181
\$4,000 — 4,999.....	7.9	4,234	4.6	4,271
\$5,000 — 5,999.....	5.4	5,169	4.3	5,177
\$6,000 and over.....	9.6	7,539	8.2	7,990
Total and average.....	100.0	2,679	100.0	2,390

Replacement capital must be built up out of current earnings. A farmer usually buys a farm only once in his lifetime but he must renew most of his equipment about once every 15 or 20 years. Similarly, he must make capital expenditures for repairs, improvements and the remodelling of existing buildings or the construction of new ones. About \$2,500 per farm, on the average, had been spent on buildings since the farms included in the study were acquired; nearly half spent less than \$2,000 and the other half spent a larger amount.

Expenditures on buildings reported by the owners who acquired their farms between 1930 and 1950 were about the same as for the owners who acquired their farms between 1900 and 1930 (Table 3).

Financing of Capital Requirements.—The securing of capital needed to start farming as an owner-operator is a difficult problem, particularly for young men who did not inherit all or part of a farm business. In many cases, the father and the son combine their financial resources to make a down payment and provide the security required to secure a mortgage loan for the balance of the purchase price and operate the farm jointly for a few years. Inheritance or parental assistance during the early years of farm acquisition are the principal means by which most farmers' sons attain farm ownership.

An attempt was made to determine the amount of financial assistance which farm owners can provide for the establishment of their sons on farms. Of the farm owners 50 years of age or over, 52 per cent reported that they could not give any assistance; six per cent reported that they could supply less than one-quarter of the cash required, 11 per cent indicated that they could provide one-quarter to one-half of the amount required, nine per cent could provide one-half or more, and 22 per cent felt they could provide all the cash required.

Transfer of Ownership.—It has always been a matter of pride in Quebec to have ownership of the home farm remain in the family from generation to generation. Many farms have been transferred from father to son since they were originally settled. In the areas first settled under the French regime, there are farms which have been in the same family name for over 300 years.

Farm ownership is transferred from generation to generation according to three main types of arrangement: (1) complete transfer of the farm during the lifetime of the owner; (2) transfer plans made during the lifetime of the owner, to take effect at his death; and (3) distribution of the owner's farm property according to the provisions of inheritance when the farm had not been transferred according to either of the other two types of arrangements.

Sixty per cent of the farm owners included in the study were under 50 years of age and could not provide much information concerning the future establishment of their sons. Of the farm owners who were 50 years of age or over, 41 per cent already had one or more sons established on farms. Twenty-three per cent reported one son established, 12 per cent reported two sons on their own farms and six per cent had three or more sons farming on their own. Within the same group, seven per cent had already transferred ownership of their farms to the next generation and 27 per cent had made plans to do so.

Credit Facilities.—Quebec farmers may secure long-term loans from commercial and private lenders and two government agencies—the Quebec Farm Credit Bureau organized in 1937, and the Canadian Farm Loan Board created in 1929 by the Parliament of Canada to make long-term mortgage loans to Canadian farmers.

The Quebec Farm Credit Bureau makes first mortgage loans to farmers up to 75 per cent of the appraised value of the farm offered as security. The maximum amount of the individual loan is \$7,000. Loans are repayable at the borrower's choice in either 39½ or 25 years. Under the 39½-year plan, the interest rate is 2½ per cent per annum, payable semi-annually and the amortization rate 1½ per cent per annum. Repayments of loans are made by annual payments (principal and interest) of \$40 for each \$1,000 of the loan in two semi-annual instalments of \$20.00.

Under the 25-year repayment plan, the interest rate is 3 per cent and the amortization rate is 2.714 per cent per annum. The annual payment of principal and interest is \$57.14 per \$1,000 of loan in two semi-annual instalments of \$28.57. The interest rate on arrears is 5 per cent. Any loan may be prepaid in whole or in part at any time the borrower wishes to do so. Most of the loans are made under

the 39½-year repayment plan. From 1937 to December 31, 1952, the Bureau granted 37,591 loans, totalling \$93.5 million. Of these, 14,369 loans representing about two-thirds of the total amount loaned, were made to young farmers to help them become farm owners.

The Canadian Farm Loan Board.—The Canadian Farm Loan Board makes long-term mortgage loans to farmers up to 60 per cent of the appraised value of the farm (land and buildings) offered as security. Farmers may borrow up to \$10,000 on a first mortgage and up to \$12,000 on combined first and second mortgages. The interest rate is 5 per cent per annum with 5½ per cent chargeable on arrears. All loans are repayable in equal annual or semi-annual instalments of combined principal and interest over a period of not more than 25 years. First mortgage loans are repayable in 24 annual instalments, but shorter terms may be selected. Under the 24-year plan, the annual payments amount to \$7.25 per each \$100 of loan. Second mortgage loans are repayable within six years, with interest at 5½ per cent.

Operating capital is provided to Quebec farmers by the *Caisses Populaires Desjardins* (Credit Union) as well as by commercial banks. Intermediate and short-term credit may be obtained under the provisions of the Farm Improvement Loans Act passed by the Parliament of Canada in 1944. All loans under this Act are made by the chartered banks, which are guaranteed against loss by the Federal Government up to ten per cent of the aggregate principal amount of loans made by each bank. The 1953 Amendment to the Act which was passed by the House of Commons on March 30th, increases the maximum individual loan from \$3,000 to \$4,000. The rate is 5 per cent simple interest. The repayment periods range from one to seven years depending upon the amount borrowed and the purpose for which the loan is granted.

Once a farmer has secured the capital needed to acquire and operate a farm, his success depends upon the net cash income available for paying interest and principal on borrowed capital; his ability to retire his indebtedness depends on the level of his net cash income and the amount spent for living expenses. His ability to save money to help his children own a farm is the key to their success in the continuation of farm ownership from generation to generation. This is how some Quebec farmers have succeeded in owning a farm and helping from one to six sons start farming on their own.

The study of farm ownership in Quebec during the last fifty years indicates that most young people start farming as owner-operators, either on the home farm acquired by deed or legacy or on another farm acquired with parental assistance. Only a small proportion of the farmers had ever operated a farm as tenants.

According to the 1951 census, 94.3 per cent of the occupied farms of Quebec were operated by full owners; 2.8 per cent by part-owners and part-tenants; 1.0 per cent by managers and 1.9 per cent by tenants. The proportion of tenant-operated farms is the lowest for the last few decades.

In recent years, however, capital needed to acquire and operate a farm has steadily increased. If this trend continues, it will be more difficult for a farmer to help one or more of his sons to become established on farms of their own.

On the other hand, new developments in agriculture and new farm practices have helped farmers to operate their farms more efficiently and to secure higher incomes. For instance, new types of farm buildings—pole barns and loose housing—may be built at a much lower cost than the standard type of stanchion barns. Investment in farm machinery may be held down by the organization of machinery co-operatives which provide a legal basis whereby a group of farmers can own and operate machinery together. It is also possible to have some farm operations done on custom work more economically than by owning expensive machines which are used only a few days each year.

New types of family farm business agreements—the so-called father and son arrangements—provide for sharing the income and management of the farm while both father and son operate the business, and the eventual ownership of the farm property by the son when the father and mother retire.

Social legislation, such as family allowances and old age pensions, provide a new form of financial assistance to farm operators. Family allowances are very helpful to the farmer with a large family of young children. Old age pensions facilitate the retirement of the parents and the transfer of the farm business to their children.

CATTLE PRODUCTION IN WESTERN SASKATCHEWAN AND EASTERN ALBERTA

S. R. BURKELL

Problems of the Canadian cattle industry have been given increasing consideration in recent years, particularly in Western Canada. The demand for meat has increased, more emphasis has been given to cattle in dry and irrigated land utilization programs, and there is more "finish" feeding in Western Canada, especially in the irrigated areas of Alberta.

This article describes some of the results of a livestock production study in Western Saskatchewan and Eastern Alberta in 1951-52. The study was conducted by the Economics Division in co-operation with the Prairie Farm Rehabilitation Administration and the Department of Farm Management of the University of Saskatchewan.

The region studied comprised 17 census divisions, ten in Saskatchewan and seven in Alberta.

Development of the Cattle Industry.—Production of cattle in the study area has been continuous since the 1870's. It started under "open range" conditions in the southwestern part. Later, as settlement spread throughout the rest of the area, farm production became important. Cattle numbers have increased slowly but steadily during the past 75 years. Many problems and reverses were encountered, especially during the low price period of the 1920's and the drought years of the 1930's. A noticeable recovery took place in the 1940's, reaching a peak in 1946. In general, however, cattle numbers have remained fairly stable during the past 30 years, following trends similar to those of Alberta, Saskatchewan and the whole of Canada (Table 1). The average farm cattle inventory in the study area during the last 30 years was approximately 1.4 million head. This is fairly close to the Saskatchewan and Alberta averages and represents 16.7 per cent of the Canadian average for the same period.

Table 1.—Cattle Population in the Study Area in Alberta, Saskatchewan and Canada, 1921-51

Year	Study Area	Alberta	Saskatchewan	Canada
— 000 head —				
1921.....	1,499	1,384	1,296	8,370
1926.....	1,256	1,169	1,160	7,818
1931.....	1,218	1,125	1,189	7,973
1936.....	1,632	1,554	1,535	8,840
1941.....	1,322	1,342	1,241	8,517
1946.....	1,574	1,600	1,498	9,665
1951.....	1,448	1,563	1,275	8,371
Average.....	1,421	1,391	1,313	8,508

Source: Canada, *Census of Agriculture, 1921-51* and *Canada Year Book, 1950*.

Geographic Distribution of the Cattle Population.—Cattle production is widely scattered throughout the area. In 1951, every census division in the area reported 50,000 or more cattle on farms (Table 2). The greatest concentrations were found in census divisions 7, 8, and 10 in Alberta where each district reported over 100,000 head of cattle. The average density of cattle in these districts was 19.1, 30.9 and 21.4 head, respectively, per square mile of land, compared with an average density for the whole area of 11.7 head. The Alberta section possessed a slightly greater concentration of cattle than the Saskatchewan section. The difference in intensity of cattle production between the study area and the remainder of the two provinces is shown in Figure 1.

The various districts differ in the purposes for which cows and heifers were kept on farms. Cows and heifers kept mainly for beef purposes predominated in 11 of the 17 census division (Table 2). The heavier concentrations of beef cows and heifers were found in the south and central districts whereas milk cows and heifers tended to predominate in the northern districts.

Place of Cattle in Farm Organization.—In 1951, over 75 per cent of the occupied farms in the area reported cattle enterprises (Table 3). The proportion was slightly higher in the Alberta section than in the Saskatchewan section. A large number of the farms with cattle enterprises had some cows and heifers kept mainly for milk production. A much smaller number of farms kept cows and heifers for beef purposes, particularly in the Saskatchewan section. In the Alberta districts about one-half of the farms with cattle enterprises kept some cows and heifers mainly for beef purposes.

The size of the cattle enterprises in different districts can be ascertained through a study of figures relating to average numbers of all cattle and of milk and beef cows and heifers per farm reporting these animals (Table 3). The largest cattle enterprises were found in the southwestern part of the area, particularly census divisions 4 in

Table 2.—Number of Cattle on Farms by Census Divisions, June 1, 1951

Census Division	All Cattle				Cows and Heifers	
	Number	Number per Square Mile of Land	Number per Occupied Farm	Number per 100 acres Cropland	Kept for Milk	Kept for Beef
Saskatchewan						
3.....	67,498	8.8	11.0	2.4	11,314	29,603
4.....	80,101	10.6	21.5	4.5	7,293	40,044
7.....	74,223	9.9	12.3	2.7	16,399	27,916
8.....	61,622	6.7	9.6	1.8	10,722	25,596
11.....	53,989	9.0	9.7	2.0	19,356	13,843
12.....	50,851	8.5	9.9	2.2	15,061	15,226
13.....	58,910	8.6	11.2	2.2	14,800	20,162
15.....	92,689	11.3	8.7	3.4	45,128	11,881
16.....	79,778	9.8	11.8	5.0	29,262	17,537
17.....	70,016	10.1	14.6	6.1	17,731	23,844
Total.....	689,677	9.3	11.4	2.9	187,066	225,652
Alberta						
1.....	83,051	11.3	28.5	4.7	7,518	39,717
3.....	81,340	11.6	33.3	10.3	7,884	40,167
5.....	83,588	10.9	28.9	6.1	7,365	39,816
7.....	127,942	19.1	25.3	6.9	18,854	53,408
8.....	200,931	30.9	21.7	9.0	52,479	64,277
10.....	132,240	21.4	15.0	6.1	42,962	38,550
13.....	49,701	6.1	10.5	7.6	22,841	8,658
Total.....	758,793	15.3	21.0	7.0	159,903	284,593
Total for area.....	1,448,470	11.7	15.0	4.2	346,969	510,245

Source: Canada, *Census of Agriculture*. 1951.

Saskatchewan and 1, 3, and 5 in Alberta. The average number of cows and heifers kept for beef, per farm reporting, was relatively large in all districts compared with the average number of cows and heifers kept for milk purposes.

A further understanding of the relationship of cattle production to the general farm organization can be obtained by considering the relationship of cattle to the land acreage in crops (Table 2). The ratio of cattle to cropland was highest in areas with large acreages of unimproved range land. The Alberta districts had the greater number of cattle per 100 acres of improved farmland. The smallest number of cattle per 100 acres of improved land was found in West Central Saskatchewan—census divisions 3, 7, 8, 11, 12 and 13. The ratio in these districts was about two head per 100 acres of improved land, compared with seven head per 100 acres in the Alberta section.

Land Use.—Cattle production is closely associated with the utilization of pasture and hay lands and to a lesser extent with lands used for grain production. The total acreage used for feed production in the study area is indicated in Table 4. Cattle, however, have to compete with other kinds of livestock for the use of land. In recent years the competition for grazing and hay lands has been markedly reduced as a

result of the decline in horse and sheep numbers. At present, cattle account for a very large proportion of all animal units and, therefore, utilize a much larger acreage than other kinds of livestock.



Fig. 1.—Map of Alberia and Saskatchewan showing the study area, distribution of cattle, and census divisions in the area, June 1, 1951.

The main grazing resources in the area consist of natural prairie land which has been withheld from crop production. In 1951, the total acreage of natural prairie land was about 25 million acres, distributed about equally among the Alberta and Saskatchewan sections. There were, in addition, about 1.9 million acres of community pasture available for grazing in the area. In recent years some improved farmland has been made available for grazing. Improved pasture covered slightly more than 1.4 million acres of grazing land and cultivated hay and fodder about one million acres of improved land. Natural prairie was also used for hay purposes. Coarse grains were grown on approximately 5.6 million acres.

Summary.—Cattle raising occupies a fairly important place in the agricultural economy of this area. Cattle are found on over 75 per cent of the farms and in all parts of the area. The highest concentrations belong to the northern park belt and black soil zone where the carrying capacity is highest. Cattle raising is important

Table 3.—Number of Farms Reporting Cattle by Census Divisions, June 1, 1951.

Census Division	Farms Reporting Cattle		Per Cent of Farms with Cattle Enterprises Reporting		Average Number per Farm Reporting Cattle		
	Number	Per Cent of All Occupied Farms	Milk Cows and Heifers	Beef Cows and Heifers	All Cattle	Milk Cows and Heifers	Beef Cows and Heifers
Saskatchewan							
3.....	3,992	65.2	82.0	58.2	16.9	3.5	12.7
4.....	2,335	62.7	77.1	67.2	34.3	4.0	25.5
7.....	4,269	70.9	83.6	54.7	17.4	4.6	12.0
8.....	3,553	55.3	83.4	50.3	17.3	3.6	14.3
11.....	3,965	71.0	92.7	38.3	13.6	5.3	9.1
12.....	3,485	67.7	86.1	47.8	14.6	5.0	9.1
13.....	3,776	71.9	88.1	49.9	15.6	4.5	10.7
15.....	8,506	79.7	96.6	17.4	10.9	5.5	6.3
16.....	5,409	80.3	91.8	34.8	14.7	5.9	9.3
17.....	3,833	79.7	87.5	50.4	18.3	5.3	12.3
Total.....	43,123	71.2	88.4	42.6	16.0	4.9	12.3
Alberta							
1.....	2,040	70.0	77.3	65.0	40.7	4.8	30.0
3.....	1,933	79.2	80.1	66.5	42.1	5.1	31.3
5.....	2,193	75.8	76.4	77.7	38.1	4.4	23.4
7.....	4,227	83.6	81.8	71.6	30.3	5.5	17.6
8.....	8,139	87.8	91.4	50.2	24.7	7.1	15.7
10.....	7,735	87.5	94.0	36.5	17.1	5.9	13.7
13.....	3,938	83.3	93.8	22.2	12.6	6.2	9.9
Total.....	39,205	83.6	88.3	50.1	25.1	6.0	18.8
Total for Area.....	73,328	75.7	88.4	45.7	19.8	5.4	15.2

Source: Canada, *Census of Agriculture*. 1951.

Table 4.—Land Use by Census Divisions, June 1, 1951

Census Division	Natural Prairie	Community Pasture ^a	Improved Pasture	Cultivated Hay and Fodder ^b	Oats and Barley
Saskatchewan			— acres —		
3.....	1,408,376	39,200	115,113	20,702	265,546
4.....	2,592,303	527,778	85,495	36,317	237,402
7.....	1,462,235	182,376	100,067	31,159	269,689
8.....	1,926,733	236,740	112,214	17,673	170,606
11.....	787,190	79,280	97,409	26,647	250,125
12.....	838,966	78,920	111,049	37,179	286,334
13.....	983,168	141,820	127,153	81,189	398,576
15.....	846,718	11,360	87,059	84,284	536,580
16.....	1,050,245	20,320	49,576	67,381	332,253
17.....	1,033,723	28,320	53,880	55,228	261,641
Total.....	12,929,657	1,346,114	939,015	457,759	3,008,752
Alberta					
1.....	2,466,926	41,627	50,656	24,513	109,892
3.....	2,131,232	491,982	49,090	54,231	80,519
5.....	2,853,239	60,560	62,696	60,804	169,638
7.....	1,779,099	.....	77,680	88,490	376,637
8.....	1,360,005	.....	126,796	163,179	884,591
10.....	1,089,470	.....	102,666	83,650	732,091
13.....	603,845	.....	27,482	67,721	232,114
Total.....	12,283,816	609,169	497,966	542,588	2,585,502
Total for Area.....	23,213,473	1,945,283	1,436,981	1,000,347	5,594,254

^a Includes P.F.R.A., provincial, municipal and co-operative pastures in operation, May, 1950.^b Includes tame grasses, alfalfa, grains cut for hay and corn for silage.Source: *Census of Agriculture*, 1951; P.F.R.A. *Annual Report*, 1951; Lands Branch, Saskatchewan Department of Agriculture, Regina; Alberta Department of Lands and Forests, Edmonton; Alberta Department of Municipal Affairs, Edmonton.

in parts of southwestern Saskatchewan and southeastern Alberta, where a large part of the land is in natural pasture. Beef cattle predominate in most districts but a fairly large number of farms also keep cows and heifers for milk production. Cattle numbers have remained reasonably stable at about 1.4 million head during the past 30 years.

PUBLICATIONS OF THE ECONOMICS DIVISION

Rural Young People and Their Future Plans. *Uhlir, Frank and Helen Abell.* Ottawa. January 1953. pp. 12.

A report dealing with opinions and attitudes of selected rural young people about farming and rural life in Alberta, Ontario and Quebec. The report is divided into two main sections: *What Young Farm People Plan to Do*, and *Main Findings of This Study*.

Farm Business in the Gilbert Plains and Sifton Areas of Manitoba. *Mackenzie, J. G.* Economics Div. in co-operation with the Dept. of Political Economy of the University of Manitoba. Ottawa. January 1953. pp. 46.

This study of "the farm business in the Gilbert Plains and Sifton areas is part of a comprehensive inquiry into the economic and social problems associated with the utilization of land in Manitoba". The specific objectives of Mackenzie's study were to provide data on the physical and financial aspects of farm organization and to ascertain which factors contribute the most to farm success.

Marshland Utilization in Nova Scotia and New Brunswick. *Haase, G. and D. J. Packman.* Economics Div., in co-operation with the Nova Scotia and New Brunswick Departments of Agriculture. Ottawa. January 1953. pp. 56.

A bulletin which presents the results of the first economic study of marshland utilization undertaken in the Maritime Provinces. Following a brief description of the marshland areas of the Maritime Provinces and of the geographical setting, the authors present a comprehensive analysis of the problems pertaining to land utilization and farm organization. This analysis will provide a guide in the future planning of marshland use. With this in mind the authors proceed to describe four selected farms which have achieved a considerable degree of financial success.

The bulletin is supplemented by an historical sketch prepared by E. S. Eaton which deals with the background of agricultural development in the marshland areas of the Maritime Provinces.

The Market for Farm Products in the West Kootenay Area of British Columbia. *Shipley, W. C. and I. F. Furniss.* Ottawa. February 1953. pp. 41.

A study undertaken for the purpose of determining: (a) the market for farm products in the West Kootenay area, (b) the proportions of the total market requirements in 1950 which were produced within or supplied from outside the district, and (c) the kind, amount and value of produce from the district which was marketed elsewhere. The report is divided into five sections: *Size and Nature of the Area*; *Extent of the Market*; *Local Production Offered for Sale*; *Market Demand for Farm Products*; and *Commercial Agricultural Production in the Grand Forks Area of British Columbia*.

Canadian Agriculture in 1952, A Chronology of Federal Policies. *Dunbabin, Margaret I.* Ottawa. February 1953. pp. 37.

The first in a series of annual publications which will present a chronological record of changes in Canadian agricultural policies. This first number is more than a list of Federal Acts, Orders in Council, and Statutory Orders and Regulations. It also deals with many important events which have had a direct bearing on the formulation and the usefulness of various agricultural policies, and references are made to "provincial matters which affected policy at the federal level".

Consumption of Food by Farm Households in Prince Edward Island, 1945. *Johnston, Charlotte I. and L. E. Drayton.* Ottawa. March 1953. pp. 42.

A report on the findings of a survey of food consumption by farm households in Prince Edward Island. The survey was undertaken to measure the adequacy of the diets of farm households and to ascertain the extent to which farm households supplied their own food. The authors have divided their report into five main parts: *Quantity of Food Consumed*; *Calorie and Protein Values of the Food Consumed*; *Retail Value of the Food Consumed*; *Home Produced Food Consumed*; and *Variations in Consumption of Food by Classes of Household*.

Factors Affecting Hog Production. Schrader, F. M. Ottawa. March 1953. pp. 11 + viii.

A statistical analysis of the factors affecting changes in hog production. The various sections of the study deal with *Characteristics of Production; Factors Causing Variation in Hog Production; Measures of Hog Production; Changes in Hog Production; and, Application of Predicting Equations.* The Appendix explains the *Method of Analysis* and forms a major part of the study.

Proposed Changes in Farming Enterprises. Abell, Helen C. Ottawa. March 1953. pp. 26.

This study deals with the changes in farming enterprises planned by some farm operators in two mixed farming areas of Alberta. The report contains a brief review of the present farming enterprises and sections on: *Intention to Make Future Changes in Farming Enterprises; Nature of Proposed Changes in Farming Enterprises; Realization of Plans to Change Farming Enterprises; and, Conclusions Concerning Future Pattern of Agricultural Production in the Study Areas.*

Farming in the Armstrong District of Manitoba, 1948. Riecken, T. O. Economics Div. in co-operation with the Dept. of Political Economy, University of Manitoba, Winnipeg. March 1953. pp. 24.

A study of the experience and progress of settlers on farms on the poorer soils of the inter-lake area of Manitoba. The two main parts of the report deal with the farm business in 1948 and the changes in farm organization which have occurred from 1939 to 1948.

Marketing Ontario Grain Corn. Rachlis, M. Ottawa. March 1953. pp. iii + 40.

The object of this "study was to determine any changes in the institutional pattern of marketing grain corn" and "investigate certain aspects of the supply, demand and distribution of Canadian corn".

Factors Affecting the Weight of Market Hogs. Schrader, F. M. Ottawa. April 1953. pp. 3 + i.

A statistical study of the factors affecting the weight of market hogs.

Consumption of Food by Farm Households in Nova Scotia, 1945-46. Johnston, Charlotte I. and L. E. Drayton. Ottawa. April 1953. pp. 36.

This report deals with various aspects of farm food consumption and variations in food consumption by class of household in the province of Nova Scotia.

UNITED NATIONS PUBLICATIONS

Proceedings of the United Nations Scientific Conference on the Conservation and Utilization of Resources (17 August-6 September 1949, Lake Success, N.Y.). New York, United Nations Department of Economic Affairs. (In Canada: The Ryerson Press, Toronto). 1951:

Volume IV, Water Resources. pp. 466.

The Proceedings of the Water Resources Section of the U.N. Scientific Conference on the Conservation and Utilization of Resources are divided into eight broad parts: *The Appraisal of Water Resources; Water Supply and Pollution Problems; Comprehensive River Basin Development; A Symposium; Drainage Basin Management; Water Control Structures; Flood Control and Navigation; Irrigation and Drainage; and, Hydro Power and Other Water Uses.*

Volume V, Forest Resources. pp. 325.

This volume includes papers and discussions on: *Forest Inventories; Protection of Forests; Forest Management; Protective Functions of the Forests; Administration of the Forests; Logging and Sawmill Techniques; and, Preservation and Chemical Utilization of Wood.*

Volume VI, Land Resources. pp. 629.

This report comprises the fourteen following sections: *Methods of Soil Conservation; Organization and Evaluation of Soil Conservation Programs; Soil Survey and Research in Relation to Soil Conservation; Aids to Farming; Improving Soil Productivity; Plant Breeding; Protection of Crops and Grasslands; Storage and Preservation of Agricultural Products; Livestock Breeding; Crop Policy and the Feeding of Livestock; Livestock Diseases and Pests; Conditions of Grazing Lands; Seeding and Restoration of Natural Grazing Lands; and Opportunities for the More Effective Use of New Agricultural Lands.*

The Economic Relations Between Growers of Sugar Beet and Factories in Certain Selected Countries. Special Commodities Section, Economics Div., Food and Agriculture Organization. November 1951. pp. 63.

This study outlines the economic relationships between factories and beet growers in major producing countries. Part I deals with the legal and administrative bases of beet sugar industries in the United States, the United Kingdom, Ireland, France, Denmark and the Netherlands. Part II compares sugar prices in different countries, analyzes the relation between beet and sugar prices, and describes "the fiscal and legal sugar regimes" of various countries. Part III summarizes the provisions of beet contracts in 1949-50 in 13 countries. Canada is included among these countries.

Statistical Yearbook, 1952. New York, Statistical office of the United Nations, Dept. of Economic Affairs. (In Canada: The Ryerson Press, Toronto) 1952. pp. 554.

This fourth issue of the United Nations *Statistical Yearbook* charts the world progress from 1932 to 1951. The *Yearbook* contains a wealth of data on world population, production, consumption, transport and trade and on social and cultural developments. A substantial part of the book deals with the field of agriculture—world production of grain crops and other cereals, cotton and wool, world livestock population, world consumption of commercial fertilizers, international price trends of farm products, and other subjects pertaining to agriculture.

A Reconsideration of the Economics of the International Wheat Agreement. Food and Agriculture Organization. Rome, Italy. 10 April 1952. pp. 44.

This well-documented paper provides a description and an analysis of *The Basic Objectives of the International Wheat Agreement*, *The Problem of Implementation in Exporting and Importing Countries*, and *The Principles for the Determination of Prices*. These three sections are preceded by a *Summary and Recommendations* and followed by Appendices on *The Problem of Price Fluctuations*, *Numerical Illustrations of the Price Formulae*, and *Outline of Domestic Policies in Participating Countries*.

Agricultural Credit for Small Farmers. Food and Agriculture Organization. Rome, Italy. October 1952. pp. ii + 30.

A paper prepared by Sir Bernard O. Binns of the Agriculture Division of FAO. This paper deals specifically with the provision of credit for farmers to whom ordinary commercial credit facilities are not available.

OTHER PUBLICATIONS

Next-Year Country: A study of Rural Social Organization in Alberta. Burnet, Jean. Toronto, Univ. of Toronto Press. 1951. pp. xv + 118.

Miss Burnet studies the problems of social organization in the Hanna area of Alberta, an area which according to S. D. Clark, the writer of the Foreword, is "lacking a solid foundation on which to erect a stable social organization". The author gives a detailed description of the dry-belt economy, rural households, ethnic divisions, rural villages, relations between town and country, and the emergence of classes and cliques in the town of Hanna. The last two chapters of the book deal with the problem of the rural community and the conclusions drawn from the whole study. Broadly speaking, these problems and conclusions pertain to the economic and social adjustments required for a satisfactory social organization.

The Development of Economic Thought, Great Economists in Perspective. Edited by Henry William Spiegel. New York, John Wiley & Sons, Inc., and London, Eng., Chapman & Hall Limited. 1952. pp. xii + 811.

A book of value to economists who are interested in the history of economic thought. The editor has demonstrated skill in his selection of 40 of the great economists of all time who review and analyse the writings of other outstanding contributors to the development of the science of economics.

The book is divided into six main parts: *The Dawn of Economic Science*, *The Classical School*, *Socialists and Reformers*, *Historical and Institutional Approaches*, *The Rise of Marginalism*, and *The Growth of Modern Economics*. The chronological arrangement makes it easy for the reader to follow the steady development of economics and appraise the progress of this branch of the social sciences. Each of the 42 sections is preceded by the editor's comments on the author and the economist about whom the section is written.

A number of essays have been printed in English for the first time and others have been written especially for this volume. Economists who are more interested in modern economic thinking than in the history of economic thought will be particularly interested in the essays on "The Growth of Modern Economics". These eight essays present the views of living economists on the contributions made to the science of economics by Edgeworth, Pareto, Wicksell, Wicksteed, Marshall, Schumpeter, Keynes and Pigou.

The story of Agricultural Economics in the United States, 1840-1932. Taylor, Henry C. and Anne Dewees Taylor. Ames, Iowa, The Iowa State College Press. 1952. pp. xxvi + 1121.

In the words of the authors, this book is "Designed to stimulate the growth of wisdom as well as of knowledge", and "tells of the ideas and acts of men who have tried to solve farmers' economic problems". The book has more than a thousand pages of concise text and its impressive handling of a wealth of information on the development of the science of agricultural economics in the United States will be appreciated by agricultural economists in Canada as well as in the United States. Topics dealt with in the eight parts of the book are: *Economic Thinking Aroused by the Agricultural Depression of the 1890's*; *Early Development of Agricultural Economics in Colleges of Agriculture*; *Economic Analysis of Farm Management Problems*; *Fact Gathering and Further Study of Farm Management and Agricultural Adjustments*; *Marketing Farm Products*; *Land Economics*; *Farm Labor and Farm Wages*; and, *Farm Finance*. The last Part was contributed by Norman J. Wall of the United States Department of Agriculture.

Demand Analysis, A Study in Econometrics. Wold, Herman, in association with Lars Jauréen. New York, John Wiley & Sons Inc. 1953. pp. xvi + 358.

A book of special interest to consumption economists, market analysts, theoretical economists, mathematical statisticians and econometricians. The reader will find in it a systematic treatment of demand analysis written in the form of a research report based on the econometric approach to the solution of economic problems.

The book is divided into five parts: *A Broad Survey of Topics and Findings*; *The Paretoan Theory of Consumer Demand*; *Some Topics in the Theory of Stationary Random Processes*; *Theory and Methods of Regression Analysis*; and, *Empirical Findings*.

An Introduction to Linear Programming. Charnes, A., W. W. Cooper and A. Henderson. New York, John Wiley & Sons, Inc. 1953. pp. ix + 74.

This volume is divided into two parts: *An Economic Introduction to Linear Programming* and *Lectures on the Mathematical Theory of Linear Programming*. The first Part describes the nature of linear programming, methods used in programming calculations, and various aspects of linear programming related to other areas of work in theoretical economics. Part II includes seven lectures of special interest to those who are concerned with the systematic development of the general theory and the special aspects of linear programming.

Proceedings of the International Conference on Agricultural and Co-operative Credit, August 4 to October 2, 1952. University of California in co-operation with the Technical Co-operation Administration of the Dept. of State, the Dept of Agriculture and the Mutual Security Agency. Berkeley, Calif. 1952:

Volume I, Papers, Discussion and Group Summaries. pp. xlv + 611.

The first volume includes sixty addresses and papers presented to the general sessions of the Conference and the public, and summaries of the discussions between the delegates and the lecturers. The speakers have drawn on American sources for a large part of their materials but the documentation should be of considerable use to any one interested in problems pertaining to economic stabilization and progress, agricultural development, and agricultural and co-operative finance. The terms of reference of the Conference included financing by private banks, co-operatives and governmental institutions. These assignments were broadened by the addition of a few papers dealing with the impact of economic change and economic stabilization.

Volume II, National Reports, Inspection Trips. pp. vi + 613-1093.

Volume II is a collection of reports prepared by the delegates on the developments in agricultural and co-operative finance in their respective countries.

THE ECONOMIC ANNALIST

A BIMONTHLY REVIEW OF AGRICULTURAL BUSINESS

G. P. BOUCHER, Editor

AUGUST 1953

Vol. XXIII, No. 4

CONTENTS

	Page
The Economic Situation.....	75
Some Aspects of Canadian Tariff and Trade Policy in Relation to GATT..... <i>A. E. Richards</i>	77
Governmental Quality Control Measures for Milk and Cream Used for Manufacturing Purposes..... <i>D. K. Fairbairns</i>	79
The Marketing of Hides and Skins in Canada..... <i>J. K. Mann</i>	83
Crop Rotations and Tillage Practices in West Central Mani- toba..... <i>W. G. Smith</i>	86
Income and Farm Progress on Woodland and Parkland Soils in Northern Alberta..... <i>H. L. Sharpe</i>	91
Publications of the Economics Division.....	95
United Nations Publications.....	95
Other Publications.....	96

MARKETING SERVICE, ECONOMICS DIVISION

J. F. BOOTH, Chief

Published by Authority of the Right Honourable James G. Gardiner
Minister of Agriculture

ANNUAL AND MONTHLY INDEX NUMBERS
WHOLESALE PRICES, FARM PRICES AND LIVING COST INDEXES

Year	Wholesale Prices 1935-1939=100				Farm Prices of Agricultural Products 1935-39 =100 (e)	Commodities and Services used by Farmers 1935-39=100		Cost of Living 1935-39=100		Consumer Price Index (1949 =100) (j)
	(a) General Wholesale Index	(b) Farm Products	(c) Field Products	(d) Animal Products		(f) Equipment & Materials	(g) Eleven Factor Index	(h) Farm Living Costs	(i) Urban Living Costs	
1913.....	83.4					85.4		80.1	79.1	49.2
1914.....	85.4					90.2		82.3	79.7	49.6
1915.....	91.8					96.9		86.5	80.7	50.3
1916.....	109.8					101.7		93.7	87.0	54.2
1917.....	148.9					140.7		140.5	111.5	63.7
1918.....	166.0					164.1		160.2	131.1	72.0
1919.....	174.7					169.1		167.9	143.0	78.8
1920.....	203.2					190.1		186.5	171.3	90.5
1921.....	143.4					147.4		152.5	139.9	80.9
1922.....	126.8					124.6		134.1	127.9	74.9
1923.....	127.7					118.3		130.6	128.3	75.2
1924.....	129.5					122.3		131.9	125.5	74.0
1925.....	133.8					123.2		131.8	123.9	74.6
1926.....	130.3	144.4	158.5	130.2		119.9		130.6	121.1	75.9
1927.....	127.3	138.6	149.4	127.8		119.9		131.2	119.8	74.6
1928.....	125.6	136.3	134.3	138.2		118.3		129.3	118.5	75.0
1929.....	124.6	140.8	137.2	144.4		117.6		127.9	117.3	75.8
1930.....	112.9	119.5	105.8	133.3		105.6		117.0	113.7	75.3
1931.....	94.0	78.9	65.0	92.7		92.2		100.9	103.9	67.9
1932.....	86.9	65.5	60.4	70.5		89.3		93.3	97.8	61.7
1933.....	87.4	69.3	69.3	69.2		88.8		89.8	95.8	68.8
1934.....	93.4	83.5	80.5	86.5		96.8		95.5	97.9	59.6
1935.....	94.4	89.2	84.4	94.1	88.0	95.6		95.4	97.9	59.9
1936.....	96.7	97.9	102.2	95.7	96.9	98.7		98.1	98.3	61.1
1937.....	107.8	117.4	128.9	106.0	119.7	108.4		105.3	102.9	63.0
1938.....	102.0	102.9	100.9	104.8	105.0	101.2		101.7	101.9	63.7
1939.....	99.2	92.6	83.7	101.5	91.8	95.7		99.3	99.5	63.2
1940.....	108.0	96.1	85.4	106.7	96.8	101.8		106.8	108.5	65.7
1941.....	116.4	106.6	88.9	124.4	110.2	107.8		116.1	114.1	69.6
1942.....	123.0	127.1	109.7	144.6	133.1	119.2		131.6	119.0	72.9
1943.....	127.9	145.4	129.0	161.8	157.8	122.4		143.4	121.7	74.2
1944.....	130.6	155.3	144.5	166.1	172.4	126.0		148.0	122.8	74.6
1945.....	132.1	166.4	162.5	170.2	185.7	125.9		152.1	123.2	75.0
1946.....	138.9	179.5	177.9	181.2	204.1	128.0		157.0	127.1	77.5
1947.....	163.3	192.2	184.1	200.2	215.8	139.5		170.4	138.3	84.8
1948.....	193.4	232.1	200.6	263.7	255.8	173.1		197.4	162.8	97.0
1949.....	198.3	228.7	191.9	265.4	255.4	180.3		204.1	173.2	100.0
1950.....	211.2	236.7	191.9	281.4	260.8	189.9		210.4	177.6	102.9
1951.....	240.2	268.6	200.4	336.9	296.8	206.0		230.0	198.6	113.7
1952.....	226.0	247.2	216.9	277.5	270.2	215.8		243.1	210.0	116.5
Aug.....	223.7	242.7	208.1	277.2	268.0	212.5		245.4	204.5	116.0
Sept.....	221.9	231.9	194.8	269.1	259.5					116.1
Oct.....	220.8	227.8	192.7	263.0	252.2					116.0
Nov.....	221.4	229.3	192.1	266.5	253.0					116.1
Dec.....	221.0	228.8	189.4	268.3	252.3					115.8
1953										
Jan.....	221.5	226.4	186.4	266.4	253.3	207.7		231.7	202.6	115.7
Feb.....	220.9	222.6	182.1	263.1	249.3					115.5
Mar.....	221.9	220.8	177.3	264.3	247.7					114.8
April.....	219.6	214.5	173.0	256.0	240.7	208.2		241.3	203.4	114.6
May.....	220.1	216.9	170.6	263.2	241.7					114.4
June.....	221.7	219.3	169.9	268.8	248.9					114.9
July.....										115.4

(a) Canada. Dominion Bureau of Statistics, Labour and Prices Division. *Prices and Price Indexes*. (Mimeo.) Ottawa, Monthly.

(b) Ibid (a). Wholesale prices of products of Canadian farms.

(c) Ibid (a). Wholesale prices of grains, hay, tobacco and potatoes.

(d) Ibid (a). Wholesale prices of animals and animal products.

(e) Canada. Dominion Bureau of Statistics, Agriculture Division. *Index Numbers of Farm Prices of Agricultural Products*. (Mimeo.) Ottawa, Monthly.

(f) Canada. Dominion Bureau of Statistics, Labour and Prices Division. *Price Index Numbers of Commodities and Services Used by Farmers*. (Mimeo.) Ottawa, Jan., Apr. and Aug. Includes prices of commodities in 8 groups including farm implements, building materials, gasoline, oil and grease, feed, fertilizer, binder twine, seed and hardware.

(g) Ibid (f). Includes the 8 commodities indicated above plus tax rates, interest rates and farm wage rates.

(h) *Price Index Numbers of Commodities and Services used by Farmers*. Includes food, clothing, fuel, household equipment, health, maintenance and miscellaneous.

(i) *Prices and Price Indexes*. Includes food, rent, fuel and lighting, clothing, home furnishings and services, miscellaneous and retail prices of commodities.

(j) Canada. Dominion Bureau of Statistics, Labour and Prices Division. *The Consumer Price Index*. (Mimeo.) Ottawa, Monthly.

THE ECONOMIC SITUATION

A mid-year survey of private and public investment in Canada, conducted by the Department of Trade and Commerce, indicates that expenditures for new construction and machinery and equipment are likely to be about three per cent higher than anticipated at the beginning of the year. This represents an increase in value of nine per cent over 1952 and it is assumed that, because only minor price changes are expected, the increase in volume should be about the same as the increase in value.

The total Canadian capital expenditure program was then estimated at \$5,564 million, compared with an expenditure of \$5,122 million in 1952. Planned outlays for machinery and equipment amounted to \$2,085 million or five per cent above 1952 outlays. Construction expenditures were estimated at \$3,479 million, an increase of ten per cent from 1952.

The mid-year survey also emphasizes the strength in capital spending in mining, housing, trade and finance. Manufacturers had originally planned a reduced rate of expenditure but have since revised their plans and now expect to spend slightly more than in 1952.

The biggest increase is in housing. There was a substantial increase in housing starts in the first part of the year. This type of activity is expected to continue at a high level and expenditures for 1953 were estimated at \$992 million or \$142 million more than in 1952.

On a percentage basis, however, the greatest increase will be in the trade and financial groups where capital expenditures are expected to total \$392.9 million as compared with \$228.1 million in 1952, an increase of more than 72 per cent from 1952.

In summary, according to the press release issued by the Information Branch of the Department of Trade and Commerce on July 8, 1953, "The present survey has largely re-affirmed the strength of capital spending as anticipated at the beginning of the year. There appears to be every indication that investment outlays will continue at high levels throughout 1953".

Foreign Trade.—The value of Canada's commodity imports reached an all-time monthly peak in May. Commodity

exports were about the same in value as in May 1952 but considerably above those in earlier months of this year. As a result Canada had an import balance for the fifth successive month but this balance was much smaller in May than in April.

Total imports rose from \$393.1 million in April to an estimated \$422.2 million in May, and nine per cent over the \$386 million recorded in May 1952, the highest monthly figure for that year. Total exports (domestic and foreign) amounted to \$385 million in May 1953 as compared with \$386.9 million in May 1952.

The over-all import surplus amounted to \$37.2 million in May this year whereas in the same month last year Canada recorded a small export surplus of \$1 million.

For the first five months of this year commodity imports rose to an estimated aggregate value of \$1,813.6 million as compared with \$1,626.1 million for the first five months of 1952. Total exports had decreased from \$1,740.9 million to \$1,603.7 million. Thus, for the first five months of this year Canada had an import balance of \$209.9 million in contrast with an export balance of \$114.8 million for the corresponding period in 1952. The import balance for the first five months of 1953, on the other hand, is much below the import balance of \$295.8 million recorded for the first five months of 1951.

The estimated value of commodity imports from the United States rose from \$282.9 million in May 1952 to \$314.8 million in May 1953 and accounted for the major part of the total increase in Canadian imports. Total exports to the United States also increased, but only from \$202 million to \$224.2 million; the import balance for the month thus rose from \$80.9 million to \$90.6 million. For the first five months of the year imports from the United States rose from \$1,222.5 million in 1952 to \$1,379.5 million in 1953 and total exports to that country increased from \$937.7 million to \$991.5 million. The cumulative U.S. import balance thus rose from \$284.8 million to \$388 million.

Imports from the United Kingdom during May rose from \$33.2 million in 1952 to \$43.2 million this year. Exports decreased from \$87.8 million to \$68.5 million. The export balance thus declined from \$54.6 million to \$25.3 million. The

estimated cumulative import value for the first five months of the year rose from \$129.9 million in 1952 to \$176.3 million in 1953. During the same period exports decreased from \$318.1 million to \$238.5 million and the export balance was thus sharply reduced from \$188.2 million to \$62.2 million.

Prices.—The consumer price index for June 1 registered an increase of 0.4 per cent and reached 114.9 as compared with 114.4 on May 1. This increase follows a decline which commenced in November 1952 when the index was 116.1. Higher prices for foods were responsible for most of the increase.

The food index advanced from 110.1 to 111.4 due to higher prices for fresh and cured pork, fresh fruits and vegetables, and smaller increases in the prices of most other meats, bread and eggs. Prices of butter and canned fruits and vegetables were lower. The shelter component of the consumer price index rose from 122.9 to 123.6 and reflected an increase of one per cent in rentals.

Industrial material prices at wholesale weakened in the third week of June and the index declined to 232.7 after having stood at 234.2 since the week of May 29.

Canadian farm product prices at terminal markets rose to 224.7 for the week of June 12 from 220.9 for May 29 but receded to 217.9 by June 19. A sharp change in hog prices was a primary factor in the fluctuations of the composite index and was reflected in the animal products index which moved from 271.4 on May 29 to 277.8 on June 12 but declined to 265.6 by June 19. Other decreases in this group were for steers, calves, raw wool and western butterfat. Eggs and western lambs were higher. Field products stood at 170.2 on June 19 as compared with 170.4 on May 29. Most grains were lower; western potatoes were also lower but prices of eastern potatoes increased.

Farm Wages.—Wages paid to farm help were generally higher at May 15 this year than a year earlier. With board provided by the employer, the national average daily rate climbed to \$5.01 from \$4.90 and the monthly average to \$105 from \$101. Without board, the daily average rose to \$6.23 from \$6.00 and the monthly average to \$138 from \$135.

Cash Farm Income.—Cash income of Canadian farmers from the sale of farm products and wheat adjustment certificates during the first quarter of this year was five per cent below that for the first quarter of 1952. Farmers received a total of \$531.1 million as compared to \$559.8 million in the first quarter of 1952 and \$481.1 million in the first quarter of 1951.

Supplementary payments made to western farmers under the Prairie Farm Assistance Act amounted to \$900 thousand compared to \$1.8 million in the first quarter of 1952 and \$7.9 million in the first quarter of 1951.

Substantially smaller wheat payments and reduced returns from the sale of potatoes, tobacco and hogs accounted for much of the reduction in cash receipts during the first quarter of this year. These declines more than offset a significant increase in income from the sale of wheat and moderately larger returns from barley, eggs, dairy products, cattle and calves.

Because of the heavy year-end carry-over of the record 1952 crops of high quality western wheat and barley, unusually large marketings of these crops occurred during the first quarter of 1953. Receipts from sales of wheat during this period totalled \$112.2 million or 36.4 per cent more than for wheat sales during the first quarter of 1952.

As a result of larger marketings and higher prices, income from eggs reached \$29.7 million, 23.5 per cent more than for the same period in 1952. Lower prices for dairy products were more than offset by increases in sales; the total income from this source amounted to \$72.9 million, an increase of 5.6 per cent from the level for the first quarter of 1952. Larger marketings of cattle and calves more than compensated for marked declines in prices and provided receipts totalling \$81.2 million compared with \$76.1 million in the first quarter of 1952.

Eggs.—Egg production in Canada was lower in May and the first five months of this year than in the corresponding periods of 1952. Production amounted to 31.5 million dozen in May 1953 as compared to 33.1 million dozen in April 1953 and 31.9 million dozen in May 1952. During the January-May 1953 period, 161.1 million dozen were produced—446 thousand dozen less than in the corresponding period of 1952.

SOME ASPECTS OF CANADIAN TARIFF AND TRADE POLICY IN RELATION TO GATT¹

A. E. RICHARDS

Canada is dependent in a very vital way on the export market to remove surplus products and hold up the price structure, and to maintain employment. It is in the export market that we sell the bulk of our wheat, pulp and paper, base metals, fishery products and many agricultural products other than wheat. In fact about 25 per cent of Canada's national production is exported; about 25 per cent of Canada's agricultural production is exported and about 25 per cent of our total exports are agricultural products.

This being the case it is in our interest to open up new opportunities to expand our exports in foreign markets through the lowering of tariffs and other barriers to trade. Much has been accomplished in this direction in the last six years through the negotiation of trade and tariff agreements.

Trade means an exchange, a give and take, and if we are going to export we must import. It is also true that if a trade negotiation between two countries is to produce a mutually advantageous arrangement there must be concessions on both sides of the table. We cannot expect reductions in the tariff of another country without giving compensatory or balancing reductions in our own customs duties.

That is the situation which confronts the trade negotiator. He tries to get as much as he can and give as little as possible. But the representatives of the other country on the other side of the table have the same idea. In the end there must be compromise on both sides if there is going to be an agreement.

At Geneva in 1947, Canada, with 22 other countries, negotiated the General Agreement on Tariffs and Trade (GATT).

Countries signing the Geneva Agreement included the United States and the United Kingdom which are our most important trading partners.

A second round of tariff and trade negotiations was held in Annecy, France, in 1949 when ten additional countries signed the GATT.

A third round of negotiations was held in Torquay in the winter of 1950-51 when six new countries, including Germany, subscribed to the agreement.

The General Agreement consists of two essential parts:—

1. The general provisions or principles under which members to the agreement agree to carry out their commercial relations. It is a code of conduct in international trade.

2. A schedule of the tariff concessions negotiated at the trade conferences.

In the interest of expanding trade all countries represented at Geneva, Annecy and Torquay agreed to enter into negotiations to reduce existing tariffs and other barriers to trade.

It was agreed that the most favoured tariff treatment extended by any one member country to another would be extended to all members of the agreement. This is known as the most-favoured-nation treatment or the MFN rate of duty.

Following this principle any tariff concession made by a member country to another is generalized so that all member countries get the lower rate.

For example, the United States in tariff negotiations with Chile in 1947 reduced the U.S. import duty on onions from 2½ cents per pound to 1½ cents per pound. Chile paid for that concession by a compensatory reduction in her tariff. Under the MFN principle the reduced rate of 1½ cents per pound was extended to Canada, one might say, free of charge.

The U.S. negotiated the tariff on cabbage with the Netherlands. The U.S. import rate was reduced by 50 per cent from 1½ cents per pound to ¾ cents per pound. Canada fell heir to this reduction in the U.S. duty without making any compensatory concession.

In the case of turnips and rutabagas the U.S. negotiated this item in her tariff with Canada who has been traditionally the chief supplier of turnips to the United States. The U.S. reduced the duty by 50 per cent from 12½ cents per 100 pounds

¹ Adapted from addresses prepared for delivery at a meeting of the Bradford Marsh Growers, Bradford, Ontario, and a meeting of the Essex County Associated Growers, Leamington, Ontario.

to 6½ cents per 100 pounds. Under the MFN principle the reduced rate of 6½ cents was extended to all members of the agreement although in this case Canada paid for the concession by an offsetting reduction in the Canadian tariff.

It was agreed at Geneva that the tariff would be recognized as a legitimate form of protection to producers but this was to be the only barrier to complete free trade between member countries.

It was agreed at Geneva that the principle of national treatment would be extended to all imports. This means that after paying the customs duty no tax or charge or special regulation would be applied to imports that was not applied to products of domestic origin.

It may be thought that the terms of the agreement restrict our freedom to act independently and quickly to protect our home producers against imports. It must be remembered, however, that by this international agreement our exports are accorded similar treatment and our rights are protected abroad. It is on this balance which is pretty much the application of the golden rule that an international agreement stands or falls.

It was further agreed that the tariff concessions negotiated at Geneva, Annecy and Torquay would be printed in a schedule and the rates of duty would not be changed for the life of the agreement.

This is a commitment entered into by Canada and the other contracting parties and it cannot be changed without nullifying or impairing the concessions.

Of course if the Canadian parliament decides that Canada derives no benefit from the GATT we as a country can withdraw from the agreement. However, it seems generally agreed that the advantages of being in the agreement far outweigh the disadvantages of being outside the club.

The schedules of all tariff concessions negotiated at Geneva, Annecy and Torquay have been printed and distributed to all member countries. The Canadian schedule of concessions negotiated at Geneva includes about 1,000 items on which Canada made concessions in the customs duty. The items include everything from cabbages to typewriters and locomotives.

In the five volumes of tariff schedules which contain the concessions made by each of the 34 countries at Geneva, Annecy and Torquay there are approximately 55,000 items. Each item is identified by a number and a description of the product. The rate of duty is shown.

Fresh cabbage is found under item No. 87(d) in the Canadian customs tariff. It is found under the same number in this international tariff schedule and reads as follows:—

87(d) Cabbage:—

26 weeks	per pound.....	9/10 ct.
Otherwise		10 p.c.

In the U.S. section of this international tariff schedule fresh cabbage is listed under item 774 and reads as follows:—

774 Vegetables in their natural state

Cabbage ¾ cent per pound

The five volumes of tariff concessions indicate the permanency of the rates of duty negotiated since 1947. Canadian concessions are not only a part of the Canadian tariff, they are a part of an international tariff schedule. Canada and the 33 other countries entered into a contract at Geneva, Annecy and Torquay not to increase the scheduled rates of duty on the 55,000 items of trade. In listing the rates in the schedule each country confirmed the principle that the tariff would be the only form of protection to producers.

This was done because it was decided by the countries represented at Geneva, Annecy and Torquay that it was mutually advantageous to have stability in tariffs.

As an exporting country it is in the Canadian interest to have stability in foreign tariffs.

The full benefits of the tariff reductions are not being secured at the present time in many foreign markets. This is due to restrictive measures which some countries apply because of balance of payments difficulties. Measures to conserve foreign exchange take the form of quantitative restrictions on imports or controls on the dollars which foreign governments release for the purchase of commodities from foreign countries. Of late the General Agreement has received another major setback

in the evidence of growing protectionism in the United States where import restrictions have practically nullified concessions granted at Geneva on dairy products.

However, in spite of restrictions in foreign markets it should be said that our external trade is at record levels. Canada's total external trade in 1952 amounted to over \$8 billion, made up of \$4.3 billion of exports and \$4 billion of imports.

At Torquay in 1951 the tariff concessions negotiated at Geneva, Annecy and Torquay were bound against increase for a three-year term until January 1, 1954. Before that date the signatories to the agreement will give consideration to the renewal of the existing schedules of tariff concessions and to the possibility of another round of tariff negotiations.

GOVERNMENTAL QUALITY CONTROL MEASURES FOR MILK AND CREAM USED FOR MANUFACTURING PURPOSES

D. K. FAIRBARN¹

Quality is as important as price in securing markets for dairy products. Governments have promoted quality in dairy products, especially when these have to be sold in export markets, by establishing grading systems and, in certain cases, enforcing their use.

High-quality dairy products can be manufactured only from milk or cream of good quality. Governmental quality control programs for cream have grown up alongside those for the butter into which it is made. Programs applying to milk are less common, but interest in them has been increasing in recent years, both in this country and abroad.

The foreign governmental quality control programs for milk and cream that most affect the Canadian dairy industry are those which apply to milk used for manufacturing in countries which export dairy products on a large scale. The main dairy exporters are Denmark, New Zealand, the Netherlands, Australia, and the United States. Imported dairy produce selling in competition with our own in domestic markets usually comes from these countries. Our produce meets competition from theirs in foreign markets.

Among the products whose sales might be most affected by raising the quality of raw milk used in their manufacture are the concentrated milk products and, more particularly, skimmed and whole milk powder. There is evidence that milk powder manufactured by the low-heat process has a higher solubility index and a better flavour than powder manufactured from milk preheated at higher temperatures. Since fewer bacteria are killed during the process, low heat powder must be made from milk containing few bacteria if it is to meet federal bacteriological standards. Therefore, the extent to which output of low-heat powder can be increased is at present limited mainly by the scarcity of high-quality raw milk available for manufacturing purposes. In the past few years there has been a very sharp increase in the amount of milk powder sold directly to the consumer. It is possible that this market has a far greater potential and that this potential can only be fully exploited if a more soluble and more palatable product becomes freely available.

The Quality Control Committee of the National Dairy Council has collected material on governmental quality control programs for milk and cream from most of the major dairy exporting countries and from provincial governments in Canada. This article which is an adaptation of a report prepared in the Economics Division for presentation to this Committee, is based on material which they collected. Analysis of this material did not indicate whether government quality control programs, were, or were not, generally desirable. It is obviously necessary to compare conditions which occur when public programs are instituted with those situations in which the quality-control function is carried out without government assistance to decide this question. All that can be said here is that a number of concerns manufacturing dairy products in Canada have instituted grading systems for the milk they purchase, quite independently of government action, but there is apparently some feeling that

¹ In consultation with C. K. Johns, Senior Bacteriologist, Division of Bacteriology and Dairy Research, Science Service, Canada Department of Agriculture.

governments and industrial organizations should participate in such programs at least to the extent of drawing up grading systems to be recommended for use in all plants.

The main conclusions which have been drawn from the analysis relate to considerations which may be of importance to persons involved in the planning which must be done whenever it is decided that a governmental quality control program for milk and cream used for the manufacture of dairy products shall be instituted. Common sense suggests that one of the most important prerequisites for the success of a quality control program for milk is that the produce into which it is manufactured be sold on a quality basis. If the manufacturer neither receives a premium for better-quality produce, nor finds he can sell it more easily than that of ordinary quality, it is unlikely that he will voluntarily pay more for better-quality milk than for that of low quality. If the producer is not offered a premium for milk of high quality, it is doubtful that he will take steps to improve his product. In certain cases, it is conceivable that manufacturers or producers might band together and agree that all should attempt to improve the quality of their product for the common good, but such arrangements may break down if individuals can gain the benefits of the plan without incurring the trouble and expense involved in participating in it.

An early step in planning a governmental quality control program for milk or cream, then, is to examine the current concepts of what constitutes quality in manufactured products, with a view to basing the program upon these.

In Canada and most other important dairy countries, dairy products are often sold on the basis of grades established by governments. In addition, dairy products not meeting specified minimum standards are legally barred from sale. Under these conditions, it appears possible to set up grading systems for milk and cream which take into account those characteristics of milk which will affect the grade of the product. It can be expected that manufacturers will use these milk grades, and pay for different grades at different rates. Further, it should also be possible to arrange minimum standards for milk which correspond to minimum standards for the products into which they are made and which will be used voluntarily.

To carry this idea to its logical extreme, we might expect a grading system for milk to include a grade of milk or cream for each grade of every product. If manufacturers knew that they would produce a specific grade of product from a certain grade of milk, there would be a tendency towards the establishment of price premiums for grades of milk corresponding to price premiums for corresponding grades of product. For example, if first grade cream can be manufactured into first grade butter, and second grade cream into second grade butter, then the difference between the prices of first and second grade butter would be reflected in the difference between the prices of the two corresponding grades of cream.

This picture is over-simplified, and must be modified in practice. In the remainder of this article, governmental grading programs for milk and cream will be examined to see how closely they correspond to the simple pattern described above, and why departures from it have come into being. The explanations suggested for some of these variations are tentative. They are based on discussions with persons closely connected with the dairy industry, and are presented here merely as suggestions.

One important point is that governments often make the grading of cream and milk compulsory. It appears that the compulsory feature is often introduced at the request of the dairy industry in order to ensure uniform application of grading practices. The success of such a "compulsory" program will depend, in general, upon the same factors as those affecting the success of a voluntary program.

Cream for Churning.—There is a great deal of similarity in the quality programs for cream which are in effect in the countries whose systems were studied. Most of the governments have adopted cream grades which correspond to grades of butter. They have in general decided to make it obligatory to grade cream and to fix a minimum differential between prices of the various grades. This type of program usually seems to have been successful.

Information on quality control for churning cream was available from Canada, the United States, Australia, and New Zealand, although not every part of the first three countries mentioned (where quality control is under provincial or state direction) was covered.

The Netherlands and Denmark have no need for cream controls, because factories in those countries receive whole milk only.

In each of the countries whose cream grading systems were studied, grades of cream have been established which correspond to grades of butter. In a number of cases, the grade regulations state that to be placed in a certain category, cream must be fit for the production of butter of the corresponding grade. In some cases, cream fit for manufacture into two or three of the lower butter grades is included under one cream grade. A more interesting point is that there exist grades of cream for which no corresponding grade of butter exists. These do not appear in grading regulations for cream in Australia and New Zealand; but are apparent in the regulations of a number of American states and Canadian provinces.

The grades "Table Cream" (Canada) and "Sweet Cream" (United States) apparently serve a function in that they provide a basis for distinguishing cream meeting fluid standards. There is, however, no such simple explanation of the usefulness of the "Special Grade" of cream adopted in a number of Canadian provinces. This special grade is intermediate between Table and First grade. It was established to correspond to the old "Special Grade" of butter, but the use of the latter was discontinued many years ago. Because the special grade for cream has remained in use in some provinces, and payment of premiums for special grade has continued, it appears that the grade may have its place. One of the reasons for the acceptance of the special grade which have been suggested is that it can be made into butter scoring above the minimum for first grade. It is suggested that 93- and 94-score butter sell more readily than, and sometimes at a premium above, butter which scores 92 and thus just meets minimum requirements for first grade. Furthermore, a reputation for supplying high-quality butter may improve a factory's status. Again, there is some reason to believe that creameries like to have a fair proportion of special grade cream to mix with first grade cream so that they may be sure of producing butter that meets first grade specifications.

These considerations suggest that, to the simple picture of the structure of a successful grading program for milk or cream outlined above, should be added the proviso that a complete program should include grades of milk or cream corresponding to all commercially-recognized qualities of product represented in the market.

Perhaps, also, present cream grading regulations set standards that may be a little lower than what are required if first grade cream handled with the normal precautions is always to yield first grade butter. This latter consideration does not necessarily suggest that the grading system should be changed to correspond rigidly to the simple formula.

It would seem that prices for grades of cream should accurately reflect prices for corresponding grades of butter under systems of the type in general use. Information available from Ontario indicates that creameries are required by law to establish a spread of five cents per pound of butterfat between prices paid for first and second grade cream, although the spread between prices of first and second grade butter has recently been only about one cent per pound at Montreal. It would seem, then, that the minimum differential for cream is higher than what the market could support. We would expect creameries, in their own interests, to pay no more than the minimum differential and to press for a reduction of this legal minimum.

In actual practice, however, creameries often establish differentials of more than five cents a pound between prices for first and second grade cream. In explanation of this fact, it has been suggested that many creameries find it expensive to process second grade cream when little is being received. Collecting enough second grade cream for a churning may mean waiting several days; by this time the earlier receipts may have deteriorated. In other words, second grade cream is five cents per pound cheaper than first grade cream—but making second grade butter costs more per pound than making first grade butter. In addition, the costs of assembling lots of second grade butter big enough for shipment to distant markets may be large because only small quantities are produced in any one area. Second grade butter made in the Prairie Provinces must almost always be sent east because there is little western demand for this grade.

Whether or not these explanations are correct in detail, it appears probable that processing or marketing expenses connected with second grade cream are greater than those associated with first grade cream.

Milk for Manufacturing.—Although cream grading regulations normally relate quality in cream directly to quality in product, there is little co-ordination between milk grading programs established by governments in the countries studied and the grading systems for the products into which they are manufactured. This is not surprising in view of the fact that what constitutes quality in milk to be used for manufacturing purposes cannot be defined as precisely as what constitutes quality in cream to be used for butter-making. It is more difficult, for example, to say what characteristics are required in milk to make it fit for the production of first grade cheese, than to decide what standards cream must reach if it is to yield first grade butter.

Were ideas of milk quality made more precise through research, a further problem would have to be solved before the principle of establishing a grade of raw product for each grade of every manufactured product could be applied. If grades of milk were multiplied to the point where there were grades of milk corresponding to each grade of cheese, to each grade of butter (and to the grades of the dry skimmed milk which is produced jointly with butter), besides grades corresponding to minimum standards for concentrated whole milk products, the expense of carrying out the quality control program might well become excessive. In actual practice, milk when graded is usually separated into a few broad categories by tests of quality which are important for whatever purpose it is used. The governments of Ontario and Wisconsin, the only ones in North America that have instituted quality control programs for milk used for manufacturing purposes, have chosen to follow this system. Somewhat similar programs are in operation in Denmark and in several of the Australian states.

Practice in New Zealand differs in a way which points to one method of attacking the problem of avoiding multiplication of milk grades. There, cheese milk is graded under one system, and other types of milk under a second. The tests used for grading cheese milk have evidently been established with the idea that they will be especially applicable to differentiating milk according to its suitability for cheese-making. They include a modification of the Wisconsin curd test, which was designed to assess the suitability of milk for making cheddar cheese.

It is difficult to discover what price differentials between grades of milk are appropriate when the system under which a few broad grades are used in all factories is in operation. It cannot be expected that factories making different products will pay the same premiums for high-quality milk. The question becomes exceedingly complicated when the cases of factories making several products are examined.

Consequently, it appears difficult for governments to set appropriate fixed price differentials between milk grades where a variety of products are manufactured from the raw milk. However, New Zealand and Australia have long required the payment of small minimum price differentials between grades, amounting to $\frac{1}{2}$ d or 1d per pound of butterfat (roughly, $\frac{1}{2}$ to 1 cent). If these minima are smaller than those which the market can support, no harm is done by having them, and they may serve to stimulate manufacturers' interest in improving quality of milk receipts by paying premiums to producers.

The Initial Stages of the Program.—Earlier in this article, it was implied that a grading system for milk should go no further than to reflect market preferences for the different qualities of produce into which milk is manufactured. Nevertheless, it is by no means out of the question that a determined effort to improve milk quality could in a short time, through its effect on the quality of the final product, lead to the establishment of new market preferences. If consumers were supplied with better-quality products, their tastes might develop to the point that they would be willing to pay a premium rather than go back to using produce of the quality which now satisfies them. The difficulty is that the program might break down, for causes previously mentioned, before consumer preferences for high quality became strong enough to set the program on a stable basis. The place of government subsidies in quality improvement programs evidently comes into the picture at this point.

THE MARKETING OF HIDES AND SKINS IN CANADA

J. K. MANN

Hides and skins are produced as by-products of the slaughtering industry, and the volume of livestock slaughter determines the number of hides and skins available to the tanning industry. Thus the supply of hides is very inelastic, the price received for hides not being an important factor in the determination of the number of hides which will be marketed in a given period of time.

The price received for hides will of course have some effect on the price received for livestock, and hence on the volume of livestock slaughter. However, the effect of hide prices on the prices of livestock is not usually large, because the value of the hide is only a small percentage of the value of the live animal. A 60 pound steer hide worth \$24 in 1951 would have been worth only about \$11 in 1952, the price in the interval having declined from 40 cents to about 18 cents per pound. Thus a packing-house which bought a 1,000 pound live steer for \$300 in 1951 would have been prepared to pay only \$287 for it in 1952 if no change in the value of the other by-products, or the beef, had taken place. In this instance a 55 per cent drop in the price of hides would have resulted in a 4.3 per cent drop in the price of cattle. So many other factors besides price affect the volume of cattle marketings that it is not likely that a 4.3 per cent drop in cattle prices would have any significant effect upon the volume of cattle slaughter, and hence upon the supply of hides.

Table 1.—Numbers of Cattle Hides Available for Tanning, Canada, 1946-53

—	Stocks of Raw Hides at Jan. 1	Hide Wettings	Imports ^a	Exports ^a	Stocks of Raw Hides at Dec. 31	Available for Tanning
	—numbers of hides—					
1946.....	882,448	2,531,425	25,747	168,201	647,706	2,439,137
1947.....	647,706	2,408,955	416,168	115,380	692,684	2,153,145
1948.....	692,684	1,880,153	251,647	862,350	493,794	2,291,966
1949.....	493,794	1,787,909	492,906	772,436	420,545	1,994,190
1950.....	420,545	1,710,887	496,320	611,296	332,387	1,737,705
1951.....	332,387	1,498,622	451,821	426,404	320,920	1,461,738
1952.....	320,920	1,766,356	455,714	222,948	448,243	1,660,913

^aExports and imports 1946-48 inclusive, derived from Dominion Bureau of Statistics publications.

Since hides are fairly easy to transport the hide market is international in character. The price of hides in the United States is the most influential factor in determining Canadian hide prices, because that country is both the largest producer of hides and the largest consumer of leather. American hide prices are in turn influenced by the volume of foreign livestock slaughter, and by such factors as the growth of the tanning industry in other livestock producing countries.

While the volume of livestock slaughter in any country is usually the principal factor in determining the volume of tannery output, the possibility of international trade in hides enables tanneries to free themselves from the vagaries of the livestock slaughter cycles in their own countries.

Finished leather and leather products also enter into international trade. The boot and shoe manufacturer can import leather if the price of domestically produced leather rises above the delivered price of foreign leathers, and similarly boots and shoes may be imported when the price of these products produced domestically exceeds the delivered price of foreign boots and shoes. Thus whenever domestic hide production is not high enough to satisfy all the demand for leather products, the vertical competition within the hide-leather-leather products processing structure will ensure that not all the necessary imports will take the form of imports of hides and skins.

In Canada cattle hides and calf skins are the principal items of trade in the hide and skin market. This is because the number of horses has been declining for about thirty years, and the number of sheep slaughtered is insufficient to supply the

domestic demand for sheep-skin. Also, very few hogs slaughtered in this country are skinned. The dominance of domestic cattle and calf leather is indicated by the fact that in 1951 cattle hides accounted for about 80 per cent, and calf skins 11 per cent, of the value of all domestic hides processed by tanneries in this country.

Hides from livestock slaughtered in Canadian packing-houses are in some instances sold directly to tanneries which are subsidiary to the packing-house concerned. In other cases hides are sold to independent tanneries, either directly or through hide brokers. Tanneries in the United States constitute another market outlet. Hides from animals slaughtered in butcher shops, or on the farm, are usually bought by hide dealers, by whom they are sold to brokers, exporters, or direct to tanneries. In addition, the hide is sometimes recovered from animals which have died on the farm or in transit. However, the percentage of hides which is recovered from this "fallen stock" appears to be rather small in this country. The number of hide wettings, that is, the numbers of hides submitted to the first stage in the tanning process, is therefore a good indicator of the domestic availability of hides, when allowance has been made for hides imported and exported.

Canadian tanneries have been decreasing in numbers in the past thirty years, but appear to have grown in size (Table 2). In 1919 the tanning industry comprised 113 establishments with 4,211 employees. By 1951 the number of tanneries had shrunk to 67, although the number of employees, at 4,061, had remained relatively stable.

Table 2.—Number of Tanning Establishments, with Total and Average Value of Production, Canada, Selected Years

Year	Number of Establishments	Total Value of Products	Average Value of Products
	numbers	—dollars—	
1919.....	113	45,002,082	398,248
1929.....	91	35,202,080	386,836
1939.....	84	25,584,972	304,583
1945.....	74	47,339,321	639,720
1946.....	78	56,998,751	730,753
1947.....	81	69,240,166	854,817
1948.....	73	59,982,121	821,673
1949.....	70	54,348,438	776,406
1950.....	68	59,093,493	869,022
1951.....	67	57,879,980	863,880

Source: *The Leather Tanning Industry*. (Prior to 1949 this publication was entitled *The Leather Industry*). Ottawa, Dominion Bureau of Statistics. Annually.

The larger Canadian tanneries are heavily concentrated in Ontario, this area accounting in 1951 for about 86 per cent of the total value of Canadian tannery production. Of the 67 tanneries operating in 1951, 29 were located in Ontario. The value of production of the 29 plants in Ontario in 1951 totalled \$49,752,883; of the 30 plants in Quebec \$6,045,035; and of the eight in the rest of Canada, \$2,082,062. It is estimated that the 19 largest firms in Ontario produced tannery products to the value of about \$47,500,000 (Table 3).

Although Ontario is the largest cattle slaughtering province, the tanning facilities in the province are capable of processing many more hides than are produced, and substantial numbers of raw hides are shipped from Western Canada for processing each year. Although from five to eight hundred thousand cattle are slaughtered annually in Western Canada, the number of cattle hides processed in Canada outside Ontario and Quebec seldom exceeds seventy thousand annually. The largest number of Western hides are tanned in Ontario, with a few going to Quebec and the United States.

Several factors must be considered in attempting to ascertain why tanneries should not have developed more extensively in Western Canada as an outlet for Western hides.

In Canada the manufacture of boots, shoes, gloves and other leather products is most heavily concentrated in the province of Quebec, and, to a lesser extent, in Ontario. These two provinces therefore constitute the principal market for the output of Canadian tanneries. This being the case, Western hides must eventually move to

Eastern Canada, either in the raw form or as processed leather. Whether hides or leather will be shipped will depend upon relative shipping costs and other factors.

The shipment of a given weight of leather in Canada costs from 50 to 75 per cent more than the shipment of the same weight of hides. On the other hand, one pound of hide will produce less than a pound of leather—probably an average of about three-quarters of a pound—and this factor will to a certain extent offset the higher unit cost of shipping leather. It appears unlikely that transportation costs alone would have been a deciding factor in determining the location of tanneries.

Certain inherent characteristics of the tanning industry may have hindered the establishment of the industry in Western Canada on a scale consistent with the volume of livestock slaughter. The livestock industry, and with it the tanning industry, was built up in Eastern Canada much earlier than in the West. Further, the tanning industry appears to be a representative decreasing-cost industry. Thus, when livestock slaughter did assume significant proportions in the West, it was economically more feasible to increase the size of the established Eastern tanneries, in order to process the increasing hide supplies, than it was to establish new tanneries in Western Canada. In enlarging existing Eastern plants tanners would also have obviated such difficulties as the building up in Western Canada of a skilled labor force.

Hide prices in Canada followed an upward trend from 1939 to 1950, reaching record levels in the fall of 1950 and early 1951. Prices declined slowly throughout the spring and summer of 1951, and then dropped sharply in the fall. In 1952 prices continued to fall until the spring and then assumed some measure of stability at levels somewhat less than half as high as those which prevailed during the greater part of 1951.

Table 3.—Tanning Establishments Classified by Value of Production, Canada, 1951

Province	Total Number of Establish- ments	Establishments having a production valued at:				
		Less than \$10,000	\$10,000 to \$49,999	\$50,000 to \$99,999	\$100,000 to \$499,999	\$500,000 and over
Quebec.....	30	7	—number— 8	4	5	6
Ontario.....	29	1	2	.....	7	19
All other provinces ^a	8	3	2	1	1	1
Totals.....	67	11	12	5	13	26

^a The establishments in this group are located by provinces as follows: New Brunswick, 1; Manitoba, 1; Saskatchewan, 1; Alberta, 3; British Columbia, 2.

Source: *The Leather Tanning Industry, 1951*. Ottawa, Dominion Bureau of Statistics, 1952. p. D-11.

The most important factors contributing to the high prices for hides in early 1951 appear to have been the low level of cattle slaughter in the United States and the heavy demand for leather which developed as a result of the various military preparedness programs following the outbreak of the Korean war. Numbers of cattle slaughtered in the United States decreased each year from 1947 to 1951, the volume of slaughter in 1951 being the lowest in ten years. The Korean war necessitated heavy purchases of leather to fulfil the allied armies' requirements.

The sharp break in the hide market in late 1951 resulted partly from the reversal of the developments mentioned above. United States cattle slaughter in the last quarter of 1951 showed a marked seasonal increase, and in addition a substantial increase in slaughter was being forecast for the following year. The initial effect which the outbreak of the Korean war had on hide prices was lessened as stockpiling of military supplies slackened off. Also, world cattle numbers had reached record levels at the beginning of 1951, and had continued to increase throughout the year, providing a prospect of fairly heavy cattle slaughter in 1952. These factors appear to have forced sharp reductions in hide prices in the fall of 1951.

The demand for hides appears to have decreased in recent years as a result of the introduction or improvement of substitutes for leather. These substitutes have been used increasingly in the manufacture of boots and shoes, particularly for soles.

In 1949 materials other than leather constituted about 24 per cent of the value of all materials used in the manufacture of soles in Canada, and by 1951 this figure had risen to about 32 per cent. For several years during World War II an average of over thirty million pounds of sole leather was produced in Canada annually. This production has shrunk steadily since the war, until by 1951 it was less than fourteen million pounds.

In recent years, the shortage of cattle hides in both the United States and Canada probably contributed to the increased use of substitutes for leather, and in turn the substitute materials very likely prevented still greater increases in hide prices than actually took place in 1950 and early 1951. By 1952 the combined effect of the upswing in cattle slaughter, the increased use of substitutes and the falling off of military requirements was causing a downward movement of hide prices.

As in the United States, cattle and calf slaughter in Canada during 1951 was at a very low level, and this was reflected in the processing by Canadian tanneries of less than half as many domestic cattle hides and calf skins as were processed in 1946, when slaughter was at a high level. To keep tanneries operating at full capacity it would have been necessary to import large numbers of raw hides. However, the competition of foreign tanneries for hide supplies was becoming keener, and in 1951 the number of foreign cattle hides and calf skins tanned in Canada was the smallest since 1946. The physical volume of Canadian tannery production was the lowest in many years and domestic leather requirements were supplied by increased importations of leather, and boots and shoes, both of which were at or near record levels.

Besides operating at much less than full capacity in 1951, Canadian tanneries were faced with another problem. Several months usually elapse between the time that a hide enters a tannery and the time that the resultant leather is sold. Since hide prices in late 1950 and early 1951 were at record levels, but declined slowly throughout the year, it follows that during the year tanneries were selling on a falling market leather manufactured from hides bought on a rising market. As a result of these various factors the value of tannery production in 1951 exceeded the cost of materials used, plus wages and salaries, by only about six per cent, compared with an average of about 20 per cent in the previous ten years.

The outlook for the next few years is for increased production of hides and skins in both Canada and the United States. No increase above 1952 hide price levels, and probably some decrease, can be anticipated for some time. The lower hide prices may serve to prevent a larger proportion of the leather market being captured by substitute products.

CROP ROTATIONS AND TILLAGE PRACTICES IN WEST CENTRAL MANITOBA

W. G. SMITH

The most common crop rotation on 198 farms in west central Manitoba in 1952 was two years of grain followed by one year of summerfallow. On 43 per cent of these farms wheat was the first crop after summerfallow, and barley and oats the second; 28 per cent of the farms had wheat and some barley as the first crop, and wheat, barley and oats as the second crop; seven per cent did not grow wheat but had barley and oats as first and second crops. A two-year rotation of grain and summerfallow was followed on nine per cent of the farms; the remainder had rotations of four, five or eight years, or more than one rotation on the same farm. On all farms, wheat, barley, and oats covered 58 per cent of the cropland acres, and summerfallow, 38 per cent. Flax, rye, and forage crops accounted for the remaining four per cent and were relatively unimportant.

This information was obtained in the fall of 1952 from 198 farm operators in west central Manitoba. Most of the farmers had operated their present farms for at least ten years. They lived in the vicinities of the towns of Neepawa, Minnedosa, Erickson, Strathclair, Oak River and Shoal Lake. The main soil types in this area belong to the deep, shallow, and calcareous phases of the Newdale association, which are northern Black Earth soils and Erickson clay loam, a Grey-Black soil.

Crop Rotations.—Some of the factors a farmer considers in selecting his cropping systems are his requirements for cash and feed crops, and summerfallow; he also considers the effectiveness of the crops in weed control and the adaptability of

particular crops to the soil conditions on his farm. All of these factors are important on most farms in this region. The farms following a W-BO-F¹ rotation had one-third of their cropland in summerfallow (Table 1). Wheat was their most important crop and all of it was grown on summerfallow land. Barley was the second and oats the third most important crop.

On farms following a WB-WBO-F rotation, barley was the most important crop, followed by wheat and oats. Acreage in summerfallow accounted for slightly over one-third of the cropland acres. In this cropping system up to 40 per cent of the barley was seeded on summerfallow land. In rotation BO-BO-F, a rotation which excludes wheat, barley was by far the most important crop and occupied over 40 per cent of the cropland. The percentage of summerfallow in this rotation was higher than in the other three-year rotations. Those following the two-year rotation WBO-F had equal percentages of cultivated land in wheat and barley but a smaller percentage in oats. In this rotation some of the oats and barley would be grown on summerfallow land.

Rotations W-BO-F and WB-WBO-F appear to satisfy the requirements of a reasonable amount of summerfallow and hence land well prepared for a cash crop. In the first rotation wheat is the cash crop, and in the second rotation barley as well as wheat are cash crops. In both rotations barley and oat acreages provide for feed and aid in the control of wild oats. Farms with WBO-F rotation place greater stress on summerfallow as a possible method of achieving increased yields and better utilization of labour and machinery by reducing peak requirements in seeding and harvesting seasons.

Ninety-two per cent of the farmers following these four rotations grew wheat, 93 per cent of them grew all of it on summerfallow, and seven per cent grew part of it on stubble. Nearly all farmers using the four rotations grew oats and barley, about one-third of them grew forage and approximately ten per cent grew flax.

Table 1.—Land Use and Rotation Followed, 173 Farms in West Central Manitoba, 1952

	Rotation			
	W-BO-F	WB-WBO-F	BO-BO-F	WBO-F
Number of farms.....	85	56	14	18
Total acres per farm.....	414	477	326	581
Cropland acres per farm.....	296	277	155	356
	—per cent of cropland—			
Wheat.....	33	21	.....	20
Barley.....	18	28	42	20
Oats.....	12	14	15	10
Flax and rye.....	1	1	4	.....
Forage crops.....	3	2	2	2
Summerfallow.....	33	34	37	48
Total.....	100	100	100	100

There was some relationship between size of farm and the cropping system followed. Farms employing a WBO-F rotation were larger both in total acres and in cropland acres than those following three-year rotations (Table 1). Farms of larger than average acreage following a two-year rotation often have as many acres in crops as smaller farms following a longer rotation. The farms with a WBO-F rotation may have approximately 178 acres in crops, whereas farms following a BO-BO-F rotation may only have 98 acres in crops. Those following a WB-WBO-F rotation may have 183 acres in crops and those with W-BO-F rotation, 198 acres in crops. Farmers employing a two-year rotation may have lower costs through reduced seed and labour requirements. Those using a two-year rotation also felt that an increase in yields justified the shorter rotation. Farms following a BO-BO-F rotation were the smallest farms and had the lowest percentage of improved land.

¹ In the following discussion the rotations will be designated as follows: W-BO-F—wheat, first year; barley and oats, second year; summerfallow, third year. WB-WBO-F—wheat and barley, first year; wheat, barley and oats, second year; summerfallow, third year. BO-BO-F—barley and oats, first year; barley and oats, second year; summerfallow, third year. WBO-F—wheat, barley and oats, first year; summerfallow, second year.

Table 2.—Rotations Followed According to Soil Types, 173 Farms in West Central Manitoba, 1952

Rotation	Soil Types			
	Newdale Deep Phase	Newdale Calcareous Phase	Newdale Shallow Phase	Erickson Clay Loam
Total acres per farm.....	497	602	419	335
Cropland acres per farm.....	337	325	284	196
Per cent cropland.....	68	54	68	58
	—per cent of farm—			
W-BO-F.....	52	.....	79	41
WB-WBO-F.....	26	67	12	55
BO-BO-F.....	5	4	9	4
WBO-F.....	17	29	.....	.....
Total.....	100	100	100	100

There appeared to be some relationship between the soil type and the rotation followed. On the deep and shallow phases of the Newdale soils the most popular cropping system was one that provided for a large acreage of cash crops and average amounts of summerfallow (Table 2). On the calcareous phase of the Newdale soils a rotation that was high in feed grains was most popular. About 60 per cent of the farmers on Erickson clay loam soil favoured a cropping system that was high in feed grains and 40 per cent favoured one that was high in cash grains. An explanation of why farmers on the shallow Newdale phase and Erickson clay loam soils did not employ the two-year rotation, WBO-F, appears to be the size of farm rather than the soil type, as these farms were smaller than those on the deep and calcareous phases of the Newdale soils.

Livestock numbers varied according to the rotation followed. Farms following a W-BO-F rotation had on the average, 12 head of cattle and six pigs per farm; those following a WB-WBO-F rotation had an average of 15 head of cattle but only two pigs. On the farms which followed a WB-WBO-F rotation cattle numbers averaged 19 head per farm and pigs, nine per farm; on those following a BO-BO-F rotation the corresponding figures were 17 and ten respectively. Farms following a BO-BO-F rotation were the smallest farms but had the most pigs per farm and the second largest cattle numbers. It would appear that because of their limited acreage they used a rotation with more feed grains than cash grains in order to intensify production, and increase the relative size of their farm by converting feed grains into animal products.

Table 3.—Number of Tillage Operations According to Soil Groups, 173 Farms in West Central Manitoba, 1952

Land Preparation and Number of Operations	Soil Groups		
	Newdale Deep Phase	Newdale Shallow and Calcareous Phases ^a	Erickson Clay Loam
	—per cent of total farms—		
Summerfallow—			
5-6.....	12	16	25
7-9.....	54	50	37
10 or more.....	34	34	38
Fallow crop—			
3 or less.....	16	15	.....
4.....	45	59	82
5 or more.....	39	26	18
Stubble crop—			
5 or less.....	43	42	42
6.....	33	49	39
7 or more.....	24	9	19

^aThe shallow and calcareous phases of the Newdale soils are combined.

Tillage Operations.—Tillage methods and practices are influenced by soil types. Farmers on the deep phase of the Newdale soil used from five to sixteen tillage operations, and averaged nine per farm in working their summerfallow. Summerfallow preparation usually begins in the fall after the crop has been taken off. On the shallow and calcareous phases of the Newdale soil, farmers used from five to fifteen operations, and averaged nine per farm on summerfallow; farmers on Erickson clay loam reported a range of from five to nine operations and an average of nine per farm. Although there was a wide range in the number of tillage operations on the Newdale soils slightly more than one-half of the farms went over their summerfallow from seven to nine times, and one-third did more than nine operations (Table 3).

For the preparation of the seedbed on summerfallowed land on all types of soils, operations, seeding included, ranged from three to eight and averaged four per farm. Almost 40 per cent of the farms on the deep phase of the Newdale soils, but only 20 per cent of those on Erickson clay loam soils, required five or more operations. Preparation of the seedbed on stubble land required from four to ten operations, an average of five operations per farm. Seven or more operations were required on 24 per cent of the farms on the deep phase of the Newdale soil, on almost 20 per cent of those on Erickson clay loam, and on only ten per cent of those on the shallow and calcareous Newdale phases. In terms of total numbers of all tillage operations farms on the shallow and calcareous phases of the Newdale soil reported the smallest number, and those on the deep phase the largest number of operations.

Table 4.—Use of Tillage Implements According to Soil Groups, 137 Farms in West Central Manitoba, 1952

	Soil Groups					
	Newdale Deep Phase		Newdale Shallow and Calcareous Phases ^a		Erickson Clay Loam	
	Operation per Farm Using Implement	Farms Using Implement	Operation per Farm Using Implement	Farms Using Implement	Operation per Farm Using Implement	Farms Using Implement
	number	per cent	number	per cent	number	per cent
Summerfallow—						
Cultivator.....	5.61	98	5.34	100	5.56	100
Oneway disc ^b	1.67	88	1.84	75	1.56	46
Harrow.....	3.06	67	3.72	54	3.43	62
Plow.....	1.28	7	1.00	1	1.48	33
Fallow crop—						
Cultivator.....	1.39	54	1.36	80	1.17	90
Harrow.....	2.43	98	2.16	98	2.15	100
Stubble crop—						
Cultivator.....	1.19	79	1.30	82	1.30	91
Oneway disc.....	1.40	63	1.14	63	1.00	41
Harrow.....	2.64	100	2.35	98	2.48	100
Plow.....	1.00	2	1.07	7	1.00	44

^aThe shallow and calcareous phases of the Newdale soils are combined.
^bIncludes oneway discs, disc harrows, and diskers.

Almost 100 per cent of the farmers on all soils used a cultivator in their summerfallow work, using it more than any other implement (Table 4). A larger percentage of the farmers on the Newdale soils than of those on Erickson clay loam used a oneway; on all soil groups over one-half of the farmers using a oneway used it more than once. About one-third of the farmers on Erickson clay loam plowed, one-half of them plowing twice, but very few of those on the Newdale soils did any plowing. In preparing the seedbed on summerfallowed land nearly all of the farmers on the Newdale calcareous and shallow phases and Erickson clay loam cultivated as the major tillage operation prior to seeding. Of the farmers on the deep phase of the Newdale soil, slightly more than one-half of them used a cultivator, the remainder using a harrow for pre-seeding cultivation. Almost all of the farmers harrowed after

seeding. For preparation of the stubble cropland, on all soils, both the cultivator and the oneway disc were used, the cultivator more than the oneway. Farmers on Erickson clay loam soils were about the only ones to use a plow.

Sequence of Operations.—The most common sequence of tillage operations used in summerfallowing on the Newdale soils was to work the stubble in the fall previous to the summerfallow year, usually with a oneway disc, then disc again as the first operation the following year, followed by five or six times with a cultivator and twice with the harrow during the summer and fall. Farmers on Erickson clay loam followed about the same practices as those on Newdale soils, except that about one-third of them plowed as the first tillage operation, either in the fall or spring, and followed it up with the cultivator and harrow. In preparing the seedbed on summerfallow land on the Newdale soils the most common sequence of operations was to cultivate once, harrow once or twice before seeding, and harrow once after seeding. About one-third of the farmers on the deep phase of the Newdale soils did not cultivate but harrowed before seeding, and about one-quarter of them packed after seeding. Summerfallow seedbed preparation on Erickson clay loam was much the same except that nearly all farmers cultivated before seeding.

The preparation of the seedbed on stubble cropland was preceded by a considerable amount of stubble burning; about three-quarters of the farmers on the deep phase, almost one-half of those on the shallow and calcareous phases of the Newdale soils, and one-third of those on Erickson clay loam burned the stubble in the fall. The most common sequence of tillage operations in the seedbed preparation of stubble land was to oneway disc or cultivate in the fall after burning the stubble, and oneway disc or cultivate and harrow in the spring before seeding, and harrow again after seeding. About ten per cent of the farmers in each soil group packed the land. Burning the fallow crop stubble is an easy method of getting rid of excess straw which makes tillage operations in the fall and spring easier, but it is not considered a sound practice.

Almost all farms on all soils seeded with a double disc drill, and about ten per cent of those on the deep phase of the Newdale soil used a press drill. Tractors were the main source of power for field operations on all but two farms. A significant feature of the data on tillage operations and sequences is the wide variation among farms in the number of tillage operations required to prepare summerfallow and the land for seed. It is questionable whether the farmers who do a large number of operations—exceeding more than 12 in some cases on their summerfallow—are working their land any better than those doing seven to nine operations. The main purpose of summerfallowing is to kill weeds and store up moisture in the soil, but not to work the land so much that the soil becomes pulverized and subject to erosion. In such cases the farmer may lose much more than he has gained, for erosion of his soil will lower his yields much more permanently than weeds or lack of moisture.

Harvesting Methods.—Most of the grain is harvested with a combine; 86 per cent of the farms on the deep phase, 60 per cent on the shallow and calcareous phases of the Newdale soils, and nearly 30 per cent on the farms on the Erickson soil used a combine. Almost all of the grain was swathed before combining. Cutting the grain with a binder, stooking and threshing were most common on Erickson clay loam where 44 per cent of the farmers used this method. Small farms and those with undulating to rolling topography, such as the farms on the Erickson soils, are not suited to extensive use of combines in harvesting.

The most common method of harvesting forage on all soils was to cut it with a horse-drawn mower and handle it loose with a pitch fork; almost 80 per cent of the farmers on the deep phase of the Newdale soils, and over 60 per cent of those in the other two groups employed this method. Other methods used included the use of a power mower and baler, power mower and farm hand, forage harvester and trench silos, forage harvester and feed cutters, or binding, stooking and stacking of sweet clover or grain forage. Each of these methods, however, was used by only one or two farmers, indicating that forage harvesting methods are not as highly mechanized as grain harvesting and still rely for the most part on the horse-drawn mower and pitch fork for making hay.

INCOME AND FARM PROGRESS ON WOODLAND AND PARKLAND SOILS IN NORTHERN ALBERTA

H. L. SHARPE

Early settlers of Alberta's northland were attracted by the fertile parkland which generally required little clearing. The more extensive areas of the parkland are now occupied and, therefore, future settlement will take place on the less fertile woodland soil. In the forest regions to the north of the settled areas lies an area of about 20 million acres of arable land available for eventual settlement.

Agriculture on the parkland soils of the north is fairly progressive and prosperous and one would expect to see a similar development follow settlement on the woodland soils. An indication of future possibilities may be gained by a close observation of the progress already achieved in these areas. With this objective in mind the Economics Division undertook a study of the farm business in one of these areas in 1951. Some of the findings form the basis of this article.

Description of the Area.—The area studied is situated in the southeastern part of the Peace River district, extending from High Prairie north to McLennan. It includes a level lacustrine plain of parkland soil and a level to rolling area of woodland soil.

An important characteristic of the climate is the shortness of the frost-free period; the long-term average at High Prairie is only 90 days.¹ Compared with the longer frost-free periods in the southern parts of the province, however, longer hours of sunlight offset, in part, the effects of the shorter frost-free period. Nevertheless, the range of crops which can be grown is more limited. The average annual precipitation at High Prairie is 18.4 inches,² 70 per cent of which falls during the previous fall and the growing season.

The diversified type of farming includes the production of grain, hogs and cattle. Wheat, oats and barley, the chief grain crops, have averaged about 22, 36 and 26 bushels per acre respectively over a 30-year period.³ The increase in wheat yields on black soils is estimated to have averaged five bushels more than on grey wooded soils. Similar differences may well be expected to apply to the other grains. Legumes, particularly alfalfa, are increasing in importance, both as fodder and seed. The grey wooded soils are proving to be well adapted to legume seed production.

THE 1950-51 FARM BUSINESS SURVEY

Sixty farm operators were interviewed in the course of the survey; they were located on both parkland and woodland soils. Information was obtained for the period May 1, 1950 to April 30, 1951, covering the 1950 crop year.

Size of Farm.—Farms averaged a little less than a half section (320 acres) in size. The average parkland farm had 320 acres, including 204 acres of improved land, and the average woodland farm had 282 acres, including 105 acres of improved land. Parkland farms have been settled for a longer period than woodland farms and had more open land when first settled; this is one of the main reasons for the larger proportion of improved land on those farms. Of the unimproved land on all the surveyed farms about 70 per cent was considered arable.

Soil type and size of farm are among the factors determining the character of the farm business. To facilitate a comparison between farms on each soil type the farms on each of these soil types were divided into two groups, according to the number of acres in cropland. On the woodland soil these groups include the farms with less than 90 cropland acres and those with 90 or more. The parkland farms include a group of farms with less than 170 cropland acres and another with 170 or more acres in cropland.

Land Utilization.—Grain crops utilized about 70 per cent of the cropland on woodland farms and 80 per cent on parkland farms. The parkland area consists of low land and is thus more subject to frost than most of the woodland area. This characteristic has made barley (a short-season crop) the most important crop on parkland soils, whereas wheat is the most important crop on woodland soils. Wheat

¹ Nineteen-year average, Canadian Meteorological Service.

² Twenty-year average, Canadian Meteorological Service.

³ *Census of Canada*, "Acreage and Production of Principal Grain Crops for Census Division 15 (Alberta)". Ottawa, Dominion Bureau of Statistics.

matures earlier on the grey soils as these soils have less nitrogen to prolong plant growth. Wheat, too, is less affected by drought on the grey soils which have a lower content of organic matter. The fallowed acreage was rather small as fallowing was practised chiefly as a means of weed control.

Differences in soil fertility exert an influence on the kind of crops grown on the two soil types. The virgin parkland soil is high in fertility whereas the average woodland soil is low. After a few years of growing grain on newly broken woodland soil the fertility is substantially reduced and inoculated legumes must be grown to restore this fertility. As illustrated in Table 1, large woodland farms are the only farms with some acreage in legumes. These farms have been settled longer than the small farms and the need for soil improvement has become more apparent. The 1950 grain crop was one of the poorest crops ever harvested in the area. Grain yields were less than half the long-term average yields. An early fall frost was mainly responsible for these low yields. The types and amounts of crops grown on the average farm in each of the four farm groups are described in Table 1.

Table 1.—Land Utilization per Farm, High Prairie Area, Alberta, 1950

	Woodland Soil		Parkland Soil	
	Small Farms	Large Farms	Small Farms	Large Farms
Number of farms.....	13	16	16	15
	—acres—			
Cropland.....	58	133	107	294
Farmstead.....	4	5	5	7
Total improved.....	62	138	112	301
Total unimproved.....	169	184	96	138
Total acres.....	231	322	208	439
Acreage in crops:				
Wheat.....	21.0	44.8	11.1	34.1
Oats.....	9.1	32.0	18.7	36.9
Barley.....	12.1	12.9	61.8	160.0
Flax.....			1.5	2.0
Legume seed.....	1.4	16.1	1.9	2.0
Grass seed.....		0.2		2.7
Legume hay.....	2.0	6.7	0.3	
Grass hay.....		0.4	0.9	3.4
Improved pasture.....	0.9	0.9		3.5
Summerfallow.....	4.4	13.6	7.2	34.3
Breaking.....	7.1	5.4	3.6	15.1

Livestock Enterprises.—Livestock was kept on all farms. With the exception of hogs, their numbers did not vary appreciably either by soil type or size of farm. Woodland farms had one brood sow per farm, on the average, whereas the parkland farms had an average of two to three brood sows per farm. The small farms on both soil types had an average of two or three cows per farm and the large farms an average of three or four cows per farm. Poultry were kept mainly to supply the needs of the farm family and the size of flocks averaged about 35 birds on woodland farms and about 45 on parkland farms. There is still a considerable number of horses on farms in this area although the horse population has been declining for several years. Both parkland and woodland farms averaged about four horses per farm, although tractors were the main source of power.

Farm Receipts.—The distribution of farm receipts is summarized in Table 2. Livestock sales exceeded crop sales on all farms except the large parkland farms. Crop returns, however, would have been higher had yields been average or above average. Livestock sales were made up mainly of cattle and hog sales. Cattle sales were more important on the woodland farms and hog sales on the parkland farms. Farm produce sold consisted almost entirely of dairy products.

On only a few of the large parkland farms were there receipts from the sale of crops carried over from the previous year. This is not unusual in the more recently

Table 2.—Distribution of Farm Receipts, High Prairie Area, Alberta, 1950

	Woodland Farms		Parkland Farms	
	Small Farms	Large Farms	Small Farms	Large Farms
Number of farms.....	13	16	16	15
	—dollars—			
Crop sales.....	184	507	759	2,481
Livestock sales.....	295	667	836	1,302
Farm produce sales.....	47	245	109	47
Equipment sales.....	173	78	23	618
Custom work.....	3	47	121	20
Outside farm labour.....	215	67	161	10
Previous year's crop.....	28	4	13	878
Other.....		19		
Net increase in inventory.....	878	700	93	3,180
Total.....	1,823	2,334	2,115	8,536

settled areas of northern Alberta, where volume of production from the relatively small farms is low and the farmer must convert everything possible into ready cash for further farm development.

Farm Capital.—The capital invested per farm ranged from an average of \$5,566 per farm for small woodland farms to an average of \$24,533 per farm for large parkland farms. Table 3 presents the breakdown of investment per farm. More than 50 per cent of the farm capital was invested in land and buildings. The investment in machinery ranged from 27 to 33 per cent of the total capital invested. The investment in livestock, as a percentage of total capital, ranged from seven to 15 per cent, being largest on the small farms.

Labour Income.—The returns to the operator for his labour and management are shown for each group of farms in Table 4. Labour income was negative for most farms on the current year's operations; the greatest losses were incurred by the larger farms on the parkland soils. Grain was the main enterprise on these farms, and the losses associated with low yields were correspondingly greater where larger acreages were sown to grain.

Outside Income.—The effects of the drop in income from farm products in 1950 were minimized, to some extent, by the income secured from other sources. The

Table 3.—Farm Capital Structure and Present Net Worth, High Prairie Area, Alberta, 1950

	Woodland Soil		Parkland Soil	
	Small Farms	Large Farms	Small Farms	Large Farms
Number of farms.....	13	16	16	15
	—dollars—			
Real estate.....	3,139	5,371	6,115	12,838
Livestock.....	825	1,262	1,153	1,811
Machinery and equipment.....	1,530	2,723	2,761	8,286
Feed, seed and supplies.....	72	231	215	1,598
Total capital invested per farm.....	5,566	9,587	10,244	24,533
Other assets.....	749	1,216	1,206	3,840
Total assets.....	6,315	10,803	11,450	28,373
Total liabilities.....	509	553	552	1,634
Net worth.....	5,806	10,245	10,898	26,739

Table 4.—Average Labour Income per Farm, High Prairie Area, Alberta, 1950

	Woodland Soil		Parkland Soil	
	Small Farms	Large Farms	Small Farms	Large Farms
Number of farms.....	13	16	16	15
	—dollars—			
Total receipts.....	1,823	2,334	2,115	8,536
Total expenses.....	1,528	1,928	1,648	7,593
Return to capital and operator's labour.....	295	406	467	943
Interest on capital.....	278	480	511	1,226
Labour income.....	17	-74	-44	-283

average income per farm, obtained from outside sources during the 1950 crop year was as follows:

Woodland soil—small farms	\$ 790
—large farms	\$ 784
Parkland soil—small farms	\$ 676
—large farms	\$2,753

This outside income was derived from pensions, family allowances, P.F.A.A. bonus, participation certificates, legacies, and various other sources. Participation certificates—subsequent payments for crops sold in previous years—were an especially important and considerable source of income for farmers on the large parkland farms.

The Normal Situation.—Data presented in Table 5 give an indication of the average labour income per farm which would have been realized in 1950 had grain yields been normal, i.e., equal to the long-time average. To illustrate this hypothetical situation yields were adjusted in line with this long-time average, grades were raised one grade and costs increased by the cost of threshing the estimated additional output.

A comparison of these data with those of Table 4 will readily indicate a considerable increase in receipts and only a small increase in expenses. Thus, average labour income per farm would have been \$642 higher for the small farms and \$1,559 higher for the large farms on woodland soils, and \$1,393 higher on the small farms and \$2,697 higher on the large farms on parkland soils.

Period of Settlement and Gains in Net Worth.—On the average settlers had been established on the small woodland farms for about nine years and on the large woodland farms for about 19 years. For settlers on small and large farms on the parkland soils the corresponding figures were 16 and 18 years, respectively. During the periods for which they had been established, the operators of small woodland farms had achieved an average annual gain in net worth of \$526, and the operators of large woodland farms had gained an average of \$521 on their farms. Operators of small parkland farms had progressed at about the same rate, their average gain in net worth amounting to \$499 per year. Operators of large parkland farms, on the other hand, have fared better than the others; their average gain in net worth represented \$1,348 per year over the period of their operations.

Table 5.—Adjusted Average, Labour Income per Farm, High Prairie Area, Alberta, 1950

	Woodland Soil		Parkland Soil	
	Small Farms	Large Farms	Small Farms	Large Farms
Number of farms.....	13	16	16	15
	—dollars—			
Total receipts.....	2,522	4,047	3,648	11,486
Total expenses.....	1,585	2,082	1,788	7,846
Return to capital and operator's labour.....	937	1,965	1,860	3,640
Interest on capital.....	278	480	511	1,226
Labour income.....	659	1,485	1,349	2,414

PUBLICATIONS OF THE ECONOMICS DIVISION

Back to the land, Alberta, 1932-48. Rackham, T. S. Economics Div. in co-operation with the Alberta Dept. of Agriculture. Ottawa, March 1953. pp. 31.

A study of activities and progress under the Relief Settlement Plan introduced in Alberta in 1932. Part I, entitled *The Relief Settlement Scheme*, deals with: *Details of the Scheme; Availability of Land; Cost of the Scheme; Settlement under the Scheme; Classification of the Settlers; and Factors Influencing Degree of Success.* Part II includes an *Analysis of the Progress and Present Status of Seventy Settlers Established on Farms.* This analysis deals specifically with the: *Progress of the Settlers; Financial Statement of Settlers; and Operators' History.* Part III contains brief comments on the *Evaluation of the Scheme by Established Settlers.*

The Strawberry Enterprise in Nova Scotia. Retson, G. C. and V. A. Heighton. Economics Div. in co-operation with the Nova Scotia Dept. of Agriculture. Ottawa, January 1953. pp. 22.

This study deals with expenses and receipts from the strawberry enterprise in Nova Scotia, factors influencing strawberry labour returns, marketing, relation of the strawberry enterprise to other farm business, and outlook for strawberry production in Nova Scotia.

UNITED NATIONS PUBLICATIONS

Co-operative Hybrid Maize Tests in European and Mediterranean Countries, 1950. Food and Agriculture Organization. Rome, Italy. December 1952. pp. iii + 43.

A progress report presenting the results of experimental work on hybrid maize. It illustrates the effective co-operation of a group of countries in attacking a regional problem.

Improving the World's Grasslands. Food and Agriculture Organization. Rome, Italy. December 1951. pp. xiii + 147.

As stated in the Foreword by Dr. F. T. Wahlen, Director of the Agriculture Divisions of FAO, "Two of FAO's basic responsibilities are the securing of a sufficient nutritional standard for the world's evergrowing population, and the conservation and best use of its natural resources. Hardly any world-wide project holds out more promises . . . than a concerted campaign for the improvement of grasslands. It is the aim of this publication to render governments conscious of this task and to help technicians execute it".

The study itself was prepared by A. T. Semple of the Agriculture Division. He has divided his material into ten chapters which will indicate the scope of the study: *The Importance of Grasslands; The Place of Grass in Agriculture; Rangeland Improvement; Livestock Management; Seeding and Fertilizing; Some Examples of Mechanical Treatment and Burning; National Programmes of Grassland Improvement; Fodder from Trees and Shrubs; Supplemental Feeding; and The Need for Research.*

Food and Agricultural Legislation, 1952. Vol. I, Nos. 1 and 2. Food and Agriculture Organization. Rome, Italy. 1952.

A quarterly series of leaflets containing "a selection of food and agricultural laws and regulations of international importance". This series provides a continuation of the *Annuaire International de Législation Agricole* published from 1911 to 1946 by the International Institute of Agriculture.

World Economic Report, 1951-52. Dept. of Economic Affairs. New York, 1953. pp. x + 141.

This is the fifth in a series of reviews of world economic conditions prepared by the United Nations. The 1951-52 report analyzes major developments in domestic economic conditions and in international trade and payments during 1951 and 1952.

Part I analyzes the *Major National Economic Changes in Economically Developed Private Enterprise Economies, Centrally Planned Economies, and Selected Countries of Latin America and the Far East.* Part II deals with changes in *International Trade and Payments of Western Europe, Japan and the United States, Primary Producing Countries, and Eastern Europe and Mainland China.*

OTHER PUBLICATIONS

Agricultural Marketing. Thomson, F. L. New York and London, McGraw-Hill Book Company, Inc. 1953. pp. 483.

This is a textbook for a beginning course in marketing agricultural products. The presentation is clear and simple, with numerous illustrations. The author has drawn heavily on research work carried out in the United States, much of it his own. He has succeeded in bringing to students many of the ideas and concepts he has gathered during his years of teaching and research.

Sampling Techniques. Cochran, William G. New York, John Wiley and Sons Inc., and London, Chapman and Hall, Limited. 1953. pp. xv + 330.

This is a comprehensive review of sampling theory as it has been developed for use in sample surveys, with illustrations to show how the theory is applied in practice. The minimum knowledge of mathematics for the reader to understand proofs is elementary calculus and algebra. An introductory course in statistics is the minimum requirement in this respect.

Farm Management Analysis. Bradford, Lawrence A. and Glenn L. Johnson. New York, John Wiley & Sons, Inc., and London, Chapman & Hall, Limited. 1953. pp. xii + 438.

A book designed especially for students of farm organization and farm management. The authors have endeavoured to combine the most significant features of the so-called "traditional" and "modern" approaches to farm management.

As stated in the Preface, "Special attention [was] devoted . . . to (1) the tasks of management, (2) the principles for increasing the efficiency with which the managerial functions are performed, and (3) the problems created by the personal subjective wants and preferences of farm people".

Studies in Econometric Method. (Cowles Commission Research Staff Members). Edited by Hood, Wm. C. and Tjalling C. Koopmans. New York, John Wiley & Sons, Inc., and London, Chapman & Hall, Limited. 1953. pp. xix + 323.

This, the fourteenth monograph published by the Cowles Commission for Research in Economics, represents a precious addition to Monograph 10, *Statistical Inference in Dynamic Economic Models*. Chapter I on *Economic Measurements for Policy and Prediction* was written by Jacob Marschak and serves as an introduction to the other nine chapters. In Chapter II Tjalling C. Koopmans deals with *Identification Problems in Economic Model Construction*. The problem is studied in relation to a simple class of econometric models.

In *Causal Ordering and Identifiability* Herbert A. Simon attempts to demonstrate the importance of the notion of causation in the concept of a complete model. Chapter IV on *Methods of Measuring the Marginal Propensity to Consume* has already become a classic of economic literature. In this chapter Trygve Haavelmo illustrates the use of the least-squares method of estimation in terms of simple models pertaining to the consumption function.

For the sake of brevity only the titles of the remaining chapters and the names of their authors will be listed here. These are as follows: *Statistical Analysis of the Demand for Food: Examples of Simultaneous Estimation of Structural Equations*, by M. A. Girshick and Trygve Haavelmo; *The Estimation of Simultaneous Linear Economic Relationships*, by Tjalling C. Koopmans and Wm. C. Hood; *Asymptotic Properties of Limited-Information Estimates Under Generalized Conditions*, by Herman Chernoff and Herman Rubin; *An Example of Loss of Efficiency in Structural Estimation*, by S. G. Allen, Jr.; *Sources and Size of Least-Squares Bias in a Two-Equation Model*, by Jean Bronfenbrenner, and *The Computation of Maximum-Likelihood Estimates of Linear Structural Equations*, by Herman Chernoff and Nathan Divinsky.

River on the Rampage. Davis, Kenneth S. Garden City, N.Y., Doubleday & Company, Inc. 1953. pp. 217.

This book deals with some of the most important problems of the Kaw River Basin in the State of Kansas or, more specifically, with problems relating to sewage disposal, water pollution, soil preservation and public health.

THE ECONOMIC ANNALIST

A BIMONTHLY REVIEW OF AGRICULTURAL BUSINESS

G. P. BOUCHER, Editor

OCTOBER 1953

Vol. XXIII, No. 5

CONTENTS

	Page
The Economic Situation.....	99
Land Use in Holland Township, Grey County, Ontario.... D. J. Packman	101
Marketing Price Spreads, A Large Fresh Eggs...T. G. E. Woollam	105
Economic Factors Affecting Production and Distribution of Eggs in New Brunswick.....G. B. Murray	108
Farm Progress of World War II Veterans.....R. A. Benedict	113
Publications of the Economics Division.....	118
United Nations Publications.....	118
Other Publications.....	119

MARKETING SERVICE, ECONOMICS DIVISION

J. F. BOOTH, Chief

Published by Authority of the Right Honourable James G. Gardiner
Minister of Agriculture

ANNUAL AND MONTHLY INDEX NUMBERS

WHOLESALE PRICES, FARM PRICES AND LIVING COST INDEXES

Year	Wholesale Prices 1935-1939=100				Farm Prices of Agricultural Products 1935-39 = 100 (e)	Commodities and Services used by Farmers 1935-39 = 100		Cost of Living 1935-39=100		Consumer Price Index (1949 = 100) (j)
	(a) General Wholesale Index	(b) Farm Products	(c) Field Products	(d) Animal Products		(f) Equipment & Materials	(g) Eleven Factor Index	(h) Farm Living Costs	(i) Urban Living Costs	
1913.....	83.4					85.4		80.1	79.1	49.2
1914.....	85.4					90.2	85.3	82.3	79.7	49.6
1915.....	91.8					96.9	91.6	86.5	80.7	50.3
1916.....	109.8					101.7	100.5	93.7	87.0	54.2
1917.....	148.9					140.7	140.5	111.5	102.4	63.7
1918.....	166.0					164.1	160.2	131.1	115.6	72.0
1919.....	174.7					169.1	167.9	143.0	126.5	78.8
1920.....	203.2					190.1	186.5	171.3	145.4	90.5
1921.....	143.4					147.4	152.5	139.9	129.9	80.9
1922.....	126.8					124.6	134.1	127.9	120.4	74.9
1923.....	127.7					118.3	130.6	128.3	120.7	75.2
1924.....	129.5					122.3	131.9	125.5	118.8	74.0
1925.....	133.8					123.2	131.8	123.9	119.8	74.6
1926.....	130.3	144.4	158.5	130.2		119.9	130.6	121.1	121.8	75.9
1927.....	127.3	138.6	149.4	127.8		119.9	131.2	119.8	119.9	74.6
1928.....	125.6	136.3	134.3	138.2		118.3	129.3	118.5	120.5	75.0
1929.....	124.6	140.8	137.2	144.4		117.6	127.9	117.3	121.7	75.8
1930.....	112.9	119.5	105.8	133.3		105.6	117.0	113.7	120.8	75.3
1931.....	94.0	78.9	65.0	92.7		92.2	100.9	103.9	109.1	67.9
1932.....	86.9	65.5	60.4	70.5		89.3	93.3	97.8	99.0	61.7
1933.....	87.4	69.3	69.3	69.2		88.8	89.8	95.8	94.4	58.8
1934.....	93.4	83.5	80.5	86.5		96.8	95.5	97.9	95.6	59.6
1935.....	94.4	89.2	84.4	94.1	88.0	95.6	95.4	97.9	96.2	59.9
1936.....	96.7	97.9	102.2	93.7	96.9	98.7	98.1	98.3	98.1	61.1
1937.....	107.8	117.4	128.9	106.0	119.7	108.4	105.3	102.9	101.2	63.0
1938.....	102.0	102.9	100.9	104.8	105.0	101.2	101.7	101.9	102.2	63.7
1939.....	99.2	92.6	83.7	101.5	91.8	95.7	99.3	99.5	101.5	63.2
1940.....	108.0	96.1	85.4	106.7	96.8	101.8	106.8	108.5	105.6	65.7
1941.....	116.4	106.6	88.9	124.4	110.2	107.8	116.1	114.1	111.7	69.6
1942.....	123.0	127.1	109.7	144.6	133.1	119.2	131.6	119.0	117.0	72.9
1943.....	127.9	145.4	129.0	161.8	157.8	122.4	143.4	121.7	118.4	74.2
1944.....	130.6	155.3	144.5	166.1	172.4	126.0	148.0	122.8	118.9	74.6
1945.....	132.1	166.4	162.5	170.2	185.7	125.9	152.1	123.2	119.5	75.0
1946.....	138.9	179.5	177.9	181.2	204.1	128.0	157.0	127.1	123.6	77.5
1947.....	163.3	192.2	184.1	200.2	215.8	139.5	170.4	138.3	135.5	84.8
1948.....	193.4	232.1	200.6	263.7	255.8	173.1	197.4	162.8	155.0	97.0
1949.....	198.3	228.7	191.9	265.4	255.4	180.3	204.1	173.2	160.8	100.0
1950.....	211.2	236.7	191.9	281.4	260.8	189.9	210.4	177.6	166.5	102.9
1951.....	240.2	268.6	200.4	336.9	296.8	206.0	230.0	198.6	184.5	113.7
1952.....	226.0	247.2	216.9	277.5	270.2	215.8	243.1	210.0	187.5	116.5
1953.....						207.4	238.4	203.6		
1952										
Nov.....	221.4	229.3	192.1	266.5	253.0				184.8	116.1
Dec.....	221.0	228.8	189.4	268.3	252.3				184.2	115.8
1953										
Jan.....	221.5	226.4	186.4	266.4	253.3	207.7	231.7	202.6	184.4	115.7
Feb.....	220.9	222.6	182.1	263.1	249.3				184.9	115.5
Mar.....	221.9	220.8	177.3	264.3	247.7				184.2	114.8
April.....	219.6	214.5	173.0	256.0	240.7	208.2	241.3	203.4	183.9	114.6
May.....	220.1	216.9	170.6	263.2	241.7				183.6	114.4
June.....	221.7	219.3	169.9	268.8	249.9				184.8	114.9
July.....	221.2	219.2	173.1	265.3	244.9				186.0	115.4
Aug.....	222.4	213.6	157.2	269.9		206.3	242.1	204.9	186.4	115.7
Sept.....									186.3	116.2

(a) Canada. Dominion Bureau of Statistics, Labour and Prices Division. *Prices and Price Indexes*. (Mimeo.) Ottawa, Monthly.

(b) Ibid. (a). Wholesale prices of products of Canadian farms.

(c) Ibid. (a). Wholesale prices of grains, hay, tobacco and potatoes.

(d) Ibid. (a). Wholesale prices of animals and animal products.

(e) Canada. Dominion Bureau of Statistics, Agriculture Division. *Index Numbers of Farm Prices of Agricultural Products*. (Mimeo.) Ottawa, Monthly.

(f) Canada. Dominion Bureau of Statistics, Labour and Prices Division. *Price Index Numbers of Commodities and Services Used by Farmers*. (Mimeo.) Ottawa, Jan., Apr. and Aug. Includes prices of commodities in 8 groups including farm implements, building materials, gasoline, oil and grease, feed, fertilizer, binder twine, seed and hardware.

(g) Ibid. (f). Includes the 8 commodities indicated above plus tax rates, interest rates and farm wage rates.

(h) *Price Index Numbers of Commodities and Services used by Farmers*. Includes food, clothing, fuel, household equipment, health, maintenance and miscellaneous.

(i) *Prices and Price Indexes*. Includes food, rent, fuel and lighting, clothing, home furnishings and services, miscellaneous and retail prices of commodities.

(j) Canada. Dominion Bureau of Statistics, Labour and Prices Division. *The Consumer Price Index*. (Mimeo.) Ottawa, Monthly.

THE ECONOMIC SITUATION

Commenting on "the general outlook for Canadian development and standard of living" in an address given at the Triennial Convention of the Crown Life Insurance Company on September 2, 1953, the Right Honourable C. D. Howe, Minister of Trade and Commerce and of Defence Production, stated that 1953 "promises to be another banner year in Canadian economic development". He said that the expected increase in the gross national product from \$23 billion in 1952 to more than \$24 billion in 1953 "will be entirely attributable to an increase in the physical volume of production, for the price level has declined slightly over the past eighteen months". In his analysis of the Canadian trade situation he remarked that the volume of trade "although somewhat smaller than a year ago is still at very high levels by any normal standards. Imports during the first half of 1953 are indeed even higher than they were in the first half of 1952, which is a reflection of our continuing prosperity and expansion. Exports, on the other hand, are somewhat lower than they were in the first half of 1952, reflecting in the main some closing in of markets for manufactured goods in dollar-short countries and some price declines for important Canadian staple exports".

Foreign Trade.—Canada's commodity exports in August followed the same trend as in 1951 and 1952 and declined sharply in volume from the levels of the three previous months; they were also slightly lower in value than in August 1952.

Domestic exports were valued at \$342.6 million compared with \$393.1 million in July, a peak of \$411.7 million in June, and \$380.3 million in May. Foreign exports, in August, totalled \$4.3 million and total exports thus amounted to \$346.9 million. In August 1952 domestic exports were valued at \$346.5 million and foreign exports at \$5.2 million, for a total of \$351.7 million. The small decline in value in August 1953 is attributable to slightly lower average prices, the preliminary index for domestic exports (1948=100) having dropped to 119.0 from 120.7 in August 1952. The volume of domestic exports was practically the same in August this year as in August 1952.

Domestic exports during the first eight months of the year totalled \$2,729.3 million in 1953 and \$2,813.6 million in 1952. As for August 1953, most of the

decline in value was the result of lower prices, the actual volume being about the same for the first eight months of each of the two years.

Domestic exports to the United States increased from \$176,354,000 in August 1952 to \$196,529,000 in August 1953 and from \$1,476.9 million in the first eight months of 1952 to \$1,593.7 million in the corresponding period of 1953. The largest gains were in exports of agricultural and vegetable products, animals and animal products, wood and paper products, and iron and iron products.

Shipments to the United Kingdom, on the other hand, declined from \$72,766,000 in August 1952 to \$66,775,000 in August this year and from \$543,318,000 in the first eight months of 1952 to \$461,907,000 in the first eight months of this year. Exports of agricultural and vegetable products increased substantially but exports of wood and paper and of non-ferrous metals were much lower.

Canada's commodity imports in July 1953 were estimated at \$407.6 million, exceeding by almost 19 per cent the \$343.2 million recorded for July 1952 and falling only about three per cent short of the record value of \$420.6 million established in May this year. Commodity imports during the first seven months of 1953 reached a cumulative total estimated at \$2,624.2 million, 14 per cent above the cumulative total for the corresponding period of 1952.

Commodity imports from the United States in July were estimated at \$289.7 million, 17.5 per cent above the \$246.6 million recorded in July 1952. Imports for the first seven months of the year rose from \$1,704.4 million in 1952 to \$1,962.1 million in 1953. Imports from the United Kingdom were estimated at \$46.6 million in July 1953 as compared with \$34.1 million in July 1952; the seven-month total rose from \$195.5 million to \$266.2 million.

Employment.—Industrial employment is increasing. At the beginning of July the general index number of employment had risen by 1.8 per cent and payrolls were 1.6 per cent higher than at the beginning of June. In the 12 months preceding July there had been an increase of 2.9 per cent in employment and a gain of 10.9 per cent in weekly payrolls. Average weekly wages and salaries declined during June mainly because of the employment of many seasonal workers at the lower rates of pay. Nevertheless the July 1 figure was

6.7 per cent above the July 1 figure for 1952.

The industrial employment index for July stood at 203.3 compared to 201.6 in June 1953 and 191.4 for July 1952 and the payrolls index at 540.9 compared to 538.4 on June 1, 1953 and 470.1 on July 1, 1952. Weekly wages and salaries averaged \$59.20 compared to \$59.44 for June 1953 and \$59.95 for July 1952.

Canada's civilian labour force reached the record size of 5,515,000 workers in July, an increase of 128,000 over the June total of 5,387,000. A labour force of over five million was first reported in August 1947.

Prices.—Wholesale prices continued to move within narrow limits, the general index for August being 222.4 compared with 221.2 in July and 223.7 in August 1952.

Prices of Canadian farm products at terminal markets in August declined to 213.6 from 219.2 in July, the decrease being attributable mainly to the August 1 change in initial payment prices for western wheat and barley which caused the field products index to drop to 157.2 from 173.1 in July. Decreases in potato and hay prices also contributed to this decline. Higher prices for livestock, western butterfat and eggs, and eastern milk for cheese manufacture caused the animal products index to rise to 269.9 from 265.3 in July in spite of decreases for eastern fowl, eggs and western raw wool and western milk for cheese manufacture.

The consumer price index rose from 115.4 on July 2 to 115.7 on August 1. This third consecutive increase, following a six-month decline, placed the index at the January 1953 level. The food index, for the first time in many months, remained almost the same, moving from 112.7 to 112.8. Decreases in prices of vegetables, fresh fruits and beef were offset by increases for bread, coffee, eggs, pork products and lamb. The clothing index moved from 110.3 to 110.4 because of a price increase for knitting yarn and a fractional increase in men's wear prices. Higher quotations for fuel oil and slight increases in home furnishings and cleaning supplies changed the household operation series from 117.0 to 117.2. The largest group index change was registered by the other commodities and services component which moved up from 115.2 to 115.8, reflecting higher quotations for gasoline and hospital rates. A change in the shelter index from 123.9 to 124.1 incorporated advances in the rental and home-ownership components.

The cost-of-living index on the 1935-39 base will be discontinued after publication of the September figure.

Farm Wages.—Average wages of male help on Canadian farms were generally higher on August 15 this year than a year earlier. Average monthly wages with board were \$107 as compared with \$105 a year earlier and \$101 two years earlier. Average monthly wages without board were \$140 in August 1953, \$139 in August 1952, and \$135 a year earlier.

Average monthly wages with board were higher in Ontario and the Prairie Provinces but lower in the Maritimes, Quebec and British Columbia on August 15 this year than on the corresponding dates in 1952 and 1951. Regional figures for August 15, 1953 ranged from a low of \$85 in the Maritimes to a high of \$124 in Saskatchewan. Without board average monthly wages were higher than in 1952 in all regions except Manitoba where they were the same and in the Maritimes and Quebec where they were lower; average wages were higher than in 1951 in all regions except Quebec where they were lower, and in the Maritimes and Manitoba where they were the same. The August 1953 averages ranged from \$118 in the Maritimes to \$156 in Alberta.

Coarse Grains.—Combined exports of oats, barley, rye, and flaxseed during the 1952-53 crop year totalled 196.8 million bushels, setting a record for the second successive year and exceeding the 1951-52 total by about 47.6 million bushels.

An unprecedented export movement of 118.9 million bushels of Canadian barley exceeded by 48.9 million bushels the previous record set in 1951-52, and was the major factor in establishing a new peak for Canadian coarse grain exports. Exports of oats in 1952-53 totalled 64.9 million bushels, a decrease of about 4.7 million bushels, but exports of 9 million bushels of rye and 4.1 million bushels of flaxseed were well above the 1951-52 levels.

Fluid Milk and Cream.—Sales of fluid milk and cream were higher in July and in the first seven months of 1953 than in the corresponding periods of 1952. Milk sales for all Canada totalled 118,437,000 quarts in July and 843,708,000 quarts for the first seven months of the year, a four per cent increase over the corresponding periods of 1952. Cream sales totalled 2,336,000 pounds of butterfat in July, an increase of three per cent, and 15,935,000 pounds in the first seven months of the year, seven per cent more than in the first seven months of 1952.

LAND USE IN HOLLAND TOWNSHIP, GREY COUNTY, ONTARIO

D. J. PACKMAN

The early settlement of Ontario was carried on without the advantages of present-day knowledge of soils, drainage, crops and other scientific information. Timber was the main natural resource and much of it was exploited and destroyed. The settlers then had to rely on the soil and the crops that could be produced on it to secure their means of livelihood. This brought forth the realization that on some Ontario lands the first crop produced (timber) was the best crop. Soils low in mineral content with inadequate drainage, numerous stones, or rough topography, even if productive, are expensive to work and usually contribute best to overall farm efficiency if left in long-time pasture or forest. This, however, would leave some farms with only a small area of cultivated land. Utilization of permanent pasture requires winter feed for grazing animals and this makes the amount of land suitable for cultivation a limiting factor in the establishment of a balanced farm unit. As a result, some of the farm units which were established in the early settlement days have had to be abandoned; most of these were added to other farms in their respective districts. In this way the remaining farmers were able to increase their holdings and thus provide a higher income and better living.

Evidence of this trend may be found in the decline in the number of farms and the increase in size of farms in Ontario. The number of farms declined from 192 thousand in 1931 to 150 thousand in 1951. This reduction in numbers was much greater in some areas than in others. At the same time the average size of farm increased from 119 acres in 1931 to 139 acres in 1951. These adjustments have been taking place for many years and are still continuing.

An insight into some of the problems raised by the availability of different types of land resources may be gained by an economic study of land use in a particular area. The economic classification of the land provides the basis for this type of study. Physical and economic data are used, and when soil survey findings are available they provide the land economist with a very helpful guide which he can use in conjunction with economic data provided by farm management studies. The land economist will usually prepare an economic land map on which he will indicate local variations in the capacity of the land to produce specific outputs (crops) in response to particular inputs (practices followed or enterprises selected, labour and capital). He will attach dollar values to these inputs and outputs and thus indicate the relative capacity of various parcels of land to produce an income. The map may then serve as a prediction index of the comparative economic productivity of the land.

These maps and studies are of value whenever it becomes necessary to assess the comparative capacity of various land areas to yield economic returns, whether it be for the formulation of agricultural improvement or development programs or for the establishment of public utilities and services such as electricity, roads and schools. They are also indispensable to farmers and other individuals or agencies concerned with production in rural areas.

It was to provide this kind of service and, in particular, to indicate some of the desirable types of land use adjustments in low productivity areas that a study of land use was conducted in Holland Township, Grey County in 1952. This township was selected because it includes large areas of land unsuitable for cultivation and is regarded as representative of low income areas where population adjustments have and are still taking place.

Method of Study.—The study was conducted in October 1952 by the Farm Economics Branch of the Ontario Department of Agriculture in co-operation with the Economics Division, Canada Department of Agriculture. Farm business records were obtained by the field survey method on 82 farms for the crop year ending September 1, 1952. Long-term crop-yield data were also secured. In order to obtain accurate information relating to the geographical distribution of the various soils in the area, and information on drainage, slope and erosion, an air photo mosaic was prepared for the township.

Preliminary research indicated that the main land use problems in the area related to the inherent productivity of the various soils, the ease with which they may be cultivated, and the size of the farm business. The soils were classified on a

qualitative basis. The "poor" soils were typified by Pike Lake, the "fair" soils by Osprey, and the "good" soils included all other soils with the exception of Muck. The good soils were predominantly those of the Harkaway and Harriston series.

To determine the income which might be expected from farms of various sizes and located on various soil types, complete farm budgets were drawn up on the basis of typical farms. These budgets were designed to provide an estimate of the income associated with the various sizes of business on the different soil types under conditions which could be considered typical for the area and to serve as a gauge in appraising the value of certain soils for agricultural purposes. The estimates of income were based on conditions prevailing during the 1937-1951 period and expected to continue in the future.

Four sizes of farms representative of each of the three major soil groups in the area were chosen to illustrate the relationship of soil and size of farm to income. The farms were grouped as follows: part-time farms, less than 47 crop acres; small farms, those having 47 to 66 acres in crops; medium-sized farms, those with 67 to 94 acres in crops; and large farms, those with more than 94 crop acres. The physical data presented in the farm budgets were prepared on the basis of information obtained from the field survey and the price data were compiled from various governmental publications.

In sorting the farms on the basis of soil type it was found necessary to generalize to some extent. Since soil boundaries do not necessarily follow farm boundaries the farms were classified in three groups on the basis of the predominant soil type on which the farm crops were grown; the Pike Lake soil, the Osprey soil, and the others which were mostly Harkaway and Harriston soils.

The Pike Lake loam is closely associated with the Glenelg Gravelly Hills and the Saugeen Swampy flats. The materials from which these soils are derived vary greatly. Sometimes they are stratified and sometimes they are not. They are shallow, coarse and excessively stony. The stones are usually ungraded as to size, varying from large boulders to small pebbles. These soils have a low organic content and are rather infertile and droughty. A type of soil similar to the Pike Lake loam, but belonging to the Brown Forest Group, in the Osprey Loam. This soil is developed from till of dolomitic origin and is generally well to excessively drained. An abundance of limestone boulders on the surface and in the subsoil hinders mechanical cultivation. The Harriston soil series have developed from a grey-brown, stony, medium-textured till which has a high lime content. Sheet erosion is one of the main hazards to crop production but can be prevented in most areas with the use of long rotations and cover crops.¹

Type of Farm.—The typical farm in Holland Township may be described as a mixed farm on which beef cattle is the most important enterprise and on which a few hogs, poultry and sheep are raised. Most farmers sell some cream and a few eggs and occasionally market some woodlot products. The factors which favour this type of agriculture may be stated as follows:

1. A high proportion of land of low productivity in the area;
2. A short growing season coupled with a rather heavy rainfall during the summer months favour the production of hay and pasture;
3. Long distances from consuming centres favour the production of beef cattle rather than the sale of whole milk;
4. A relatively large proportion of stony, steeply sloping and low land not suitable for the use of modern machinery.

Submarginal Farms.—To insure its continued use in farming, land must provide sufficient returns from production over a period of years to meet the cost of operation and to provide a minimum standard of living to the farm family. Failing such a minimum return, the land becomes submarginal for full time farming. The submarginal farm is defined for the purpose of this study as a farm which will not supply the farm family with an income equal to the going wages of a hired man² over a period of years. Such a farm will not yield a return to the capital invested in the farm.

¹ For further details see the *Grey County Soils Report* (now being printed), prepared by the Experimental Farms Service, Canada Dept. of Agriculture, and the Dept. of Soils, Ontario Agriculture College.

² Wages of a hired man plus ten per cent for management.

The characteristic of submarginality does not permit rigid definition. Land which is submarginal for one type of use may have a different value under alternative types of use. Similarly, submarginality with one form of organization does not necessarily mean submarginality with an alternative form of organization. However, since the type of farming and farm organization in this area have been rather stable in recent years, it is unlikely that a major change will take place in the near future. Therefore, determination of the probable returns under the commonly adopted forms of organization and use makes it possible to arrive at a reliable estimate of the comparative capacities of various farms as a basis for a recommended use program.

Farms on Pike Lake Soil.—The main factor which limits returns pertains to the soil itself. The long-time average yields on the Pike Lake farms visited were very low with oats yielding only 23 bushels per acre, mixed grain 24 bushels, corn 5.3 tons and hay 1.2 tons per acre. The low moisture-holding capacity of the soil was responsible, in part, for these low yields, since fertilizer and manure applications were almost as liberal as on soils of higher productivity. The cost of producing these crops was almost as high as on farms with much higher yields. It is thus necessary to purchase rather large quantities of concentrates in proportion to the number of livestock kept.

Table 1.—Relation of Size of Farm to Returns, by Soil Groups, Holland Township, Grey County, 1937-1951 Average Prices and Production

Predominant Soil Type	Unit	Type of Farm			
		Part-time	Small	Medium	Large
Pike Lake Loam					
Land in crop.....	acres	a	58.1	81.4	98.0
Returns to farm labour and capital ^b	\$	—	47	371	958
Returns to labour ^c	\$	—	—201	46	605
Returns to capital ^d	\$	—	—985	—661	—542
Osprey Loam					
Land in crop.....	acres	33.1	57.4	79.6	133.0
Returns to farm labour and capital ^b	\$	446	667	1,048	1,855
Returns to labour ^c	\$	192	336	646	1,358
Returns to capital ^d	\$	—586	—365	16	355
Other Soils					
Land in crop.....	acres	37.6	70.2	88.2	127.0
Returns to farm labour and capital ^b	\$	579	961	1,213	2,210
Returns to labour ^c	\$	285	578	756	1,424
Returns to capital ^d	\$	—453	— 71	181	710

^a Very few livestock kept on these farms.

^b *The Return to Farm Labour and Capital* is the amount of money left to pay for the farm family labour and for the use of invested capital. Depreciation and inventory changes are considered but not non-farm income.

^c *Returns to Labour* is calculated by subtracting an interest charge of four per cent on invested capital from the return to farm labour and capital figure. This amount represents the returns which the farm family obtains from their year's work after paying four per cent on their capital investment.

^d *Returns to Capital* is calculated by subtracting a charge for the family labour equal to the average wages of a hired man plus ten per cent as an allowance for management from the return to farm labour and capital. This is the return to invested capital a farm family may expect over a period of one year. On the large farms, labour is charged for the farm operator plus a hired man for six months.

Excluding wooded pasture, an average of about eight acres of pasture were required per cow-equivalent on these farms. During the summer months these pastures tend to die out and the resultant grasses are of limited value as a pasture crop. With existing taxes and high fencing costs it is doubtful if such pasture represents a financially sound investment.

Under these conditions the farm family is not obtaining a return for its labour equal to the average wages of a hired man on Ontario farms during the period 1937-1951. In individual years, such as 1951, these farmers were able to obtain a return of \$198 for the \$15,002 invested in their farms and the 98 acres they had in crops but in the long run farms on this type of soil may not represent a very sound investment. By enlarging the scale of farm operation within the scale of operations studied, the farm operator is not increasing his returns but only decreasing his losses. The small farm had a net return to capital of minus \$985 as compared with minus \$542 for the large units.

The farm family may remain on these farms either by accepting a lower return to labour than the average wages of a hired man or by seeking part-time employment off the farm. In addition to the returns to labour presented in Table 1, the farmer obtains a non-cash income equal to the value of the farm products consumed and the rental value of the farm home.

Based upon the existing practices and yields on farms in Holland Township, the farms located on Pike Lake soils are unable to produce a return sufficient to warrant the continuation of farming on this type of soil. In the long run, these farms could not be expected to supply the farmer with a return to the capital invested in the farm (Table 1).

Osprey Soil Farms.—The stony or steeply sloping phases of the Osprey soil series are very similar to the Pike Lake soils in that they are difficult to cultivate with power equipment and are generally left as either rough pasture or as forest.

The typical farm on Osprey soils will supply a return to capital provided it has a minimum of about 80 acres in crops, 13 mature cows and accompanying young stock, 1.5 brood sows and a few poultry (Table 1). However, in order to supply a minimum long-time return to capital of three per cent, with typical management, a farm of 133 crop acres with 14 cows and accompanying young stock, two brood sows and a few poultry are required. The occasional farm with more advanced farm practices may supply a reasonable return to capital with less than 133 crop acres whereas a few may require more cultivated land.

The long-time average production obtained from this soil is considerably above that obtained on Pike Lake soils—a yield of about 34 bushels of mixed grain, 30 bushels of barley, 6.8 tons of corn and 1.6 tons of hay per acre. With such yields the large farms were able to maintain their livestock complement with an outlay of only \$171 for purchased feeds.

The pasture-carrying capacity of this soil may be described as fair, with an average of 4.6 acres of pasture required per cow-equivalent. The rather even distribution of rainfall in the area, together with a soil which has a fairly high moisture-holding capacity greatly assist in keeping these pastures in fair condition during the summer months. Two farmers reported improvements in their pastures with very limited cultivation, the application of some fertilizer and a top dressing of manure to the extent that one cow-equivalent could be pastured per acre during the summer.

Under present management and farm size the majority of these farms may be described as marginal. The main problems associated with farming on Osprey loam soils are twofold: the problem of the too-small farm and the adoption of more modern farm practices, especially those relating to the care and management of pastures. However, it is very likely that farms located on Osprey soils will remain in agricultural production for many years.

Farms Located on Other Soils.—For the purpose of comparing the farms on Pike Lake and Osprey soils with other farms in the township, all other soils were placed together into this category. The majority of the farms studied were located on Harkaway and Harriston soils.

About 75 acres of crops are required by the typical farm located on these soils to supply a return to capital invested (Table 1). The medium-sized farm supplied a return of \$181 to a capital investment of \$9,758, with 88.2 cropland acres, when 12 cows and the accompanying young stock and two brood sows formed the main livestock complement. However, the typical large-sized farm with 127 cropland acres, 25 cows and the young stock and three sows provided a return of \$710 to the invested capital. On a long-time basis, a return of about four per cent on the capital invested in the business was realized. On this farm an allowance of \$1,414 was made for the operator and a hired man for a six-month period.

There was considerable variation in the organization and management and in the inherent productivity of the soils in this group of farms. Therefore, figures representing the average for the group must not be interpreted as representing the actual earning power of each farm within the group. These figures may, however, be used as a guide to the size of farm and the type of organization required to produce a satisfactory return to the farm family and to labour.

In terms of the livestock carrying capacity, an average of about 3.5 acres in pasture is required per cow-equivalent on these soils. The crop yields were slightly better than on the Osprey soils with a long-term average of 36 bushels of oats, 37

bushels of mixed grain, 8·5 tons of corn and 1·7 tons of hay produced per acre. The applications of fertilizer and manure were slightly greater on these farms than on farms located on Osprey soils.

The results of this study would indicate that these soils are sufficiently productive to provide a reasonable return to the farmers located thereon, provided more than 75 acres are in crops. In the long run a return of four per cent on invested capital may be obtained when the farm has about 127 cropland acres and the typical kinds and numbers of livestock are kept.

Conclusion.—This study of land use in Holland Township exemplifies the wide variations in the earning capacity of many different soils and the need for a carefully considered land use program. Low productivity soils such as Pike Lake soils, which will not generally provide the farm operator with an income equal to the wages of a hired man, may be found in many areas of Ontario. Other soils such as Osprey offer certain obstacles to mechanical cultivation, but will provide a farmer with a reasonable income provided sufficient cropland is available, and therefore they may be expected to remain in farming either as cultivated land or pasture or both. Soil survey data are available for the majority of the agricultural areas of Ontario and constitute a sound basis for the determination of the best use of rural land resources.

MARKETING PRICE SPREADS.
A LARGE FRESH EGGS
T. G. E. WOOLLAM

The difference between prices received by farmers and prices paid by consumers, for eggs, is an important determinant of production and may even result in changes in the marketing methods employed. The consumer demand for eggs influences the final price. On the other hand, the relative profitability of producing eggs influences both supplies and price. The cost of marketing may be regarded as a wedge between demand at retail and supply, the size of the wedge being an important factor in determining the extent to which retail prices influence production. The higher the marketing costs, the more difficult it becomes to bring supplies in line with prices in such a way as to remove the wide fluctuations from year to year in both production and price.

The production cycle for eggs results in a strong seasonal pattern in both supply and price of A Large fresh eggs. However, the seasonal production pattern for the supply of all grades of eggs is not as clearly defined. This seasonality is an important determinant of the farm share of the retail price of eggs.

Egg producers have a choice among several methods of marketing their eggs and the method actually chosen will depend on factors such as the scale of production,

Table 1.—Price Spreads for Eggs, Canada, 1936-52

	Average 1936-40	Average 1945-49	1950	1951	1952
— cents per dozen —					
Actual price spreads:					
Retail.....	4·78	5·95	6·39	6·64	6·51
Wholesale.....	4·56	5·32	7·72	9·06	9·37
Total.....	9·34	11·27	14·11	15·70	15·88
Average price paid to producers.....	24·3	42·0	42·3	54·3	42·0
— per cent —					
Total spread as per cent of producer price.....	38·4	26·8	33·4	28·9	37·8
Farm share as per cent of retail price.....	72·2	78·8	75·0	77·6	72·6
— cents per dozen —					
Price spreads in terms of constant dollars:					
Retail.....	4·67	3·67	3·02	2·76	2·88
Wholesale.....	4·45	3·25	3·66	3·77	4·15
Total.....	9·12	6·92	6·68	6·53	7·03

alternative uses of time and labour, and proximity to market outlets. They may sell direct to consumers, retail stores and institutional buyers, or to egg-grading stations or first receivers.

The conventional method of marketing eggs is through the egg-grading stations and about one-half of all eggs produced are marketed this way. The egg-grading stations may carry out all or part of the wholesale function. In some instances, they are merely collecting agencies, and in others they grade, package, store, and sell to other wholesalers, jobbers or to retail outlets. Some of the larger retail outlets have their own facilities for egg grading. The station itself may vary from a large, mechanically-equipped plant to small quarters.

Table 2.—Price Spreads for Eggs, Various Regions of Canada, 1936-52

	Maritimes	Central Provinces	Prairies	British Columbia ^a
	— cents per dozen —			
Retail prices				
1936-40.....	38.0	35.8	31.0	31.2
1945-49.....	57.1	54.8	50.6	50.4
1950.....	59.5	57.5	52.2	58.8
1951.....	72.2	72.6	63.7	70.2
1952.....	62.9	60.4	52.7	58.2
	— per cent —			
Farm share of the retail price				
1936-40.....	72.2	74.5	67.3	76.9
1945-49.....	78.5	81.5	74.9	76.6
1950.....	76.6	75.8	72.6	76.2
1951.....	77.1	78.5	75.5	77.3
1952.....	73.0	74.2	69.5	72.7
	— cents per dozen —			
Price spread: producer to consumer				
1936-40.....	10.6	9.1	10.1	7.2
1945-49.....	12.3	10.2	12.7	11.8
1950.....	13.9	13.3	14.3	14.0
1951.....	16.5	15.6	15.6	15.9
1952.....	17.0	15.8	16.1	15.9
Price spread: wholesaler to retailer				
1936-40.....	5.3	3.9	5.8	3.2
1945-49.....	6.5	4.0	6.7	5.9
1950.....	8.7	6.6	8.5	7.4
1951.....	10.7	8.6	9.9	8.8
1952.....	11.1	8.7	10.3	9.1
Price spread: retailer to consumer				
1936-40.....	5.3	5.2	4.3	4.0
1945-49.....	5.8	6.2	6.0	5.9
1950.....	5.2	6.7	5.8	6.6
1951.....	5.8	7.0	5.7	7.1
1952.....	5.9	7.1	5.8	6.8

^a Figures for British Columbia are for the Vancouver Market only.

The main purpose of this article is to describe and analyze the spreads between the price paid to producers at egg-grading stations, the price paid by retailers to wholesalers, and the price paid by consumers in the main urban areas of Canada for Grade A Large fresh eggs. These price spreads are presented first for Canada as a whole and then by geographical regions. The presentation of regional data is necessary because of the wide variations among regions and the changes that have taken place in the regional price spread patterns. The comparisons made here relate to Grade A Large fresh eggs. A continuous series of prices is available for 12 Canadian cities, representing all of the provinces except Newfoundland. The average prices in these cities were weighted by regional production to derive a Canadian average.

The cost of marketing eggs has increased gradually over the years but this in itself is not an indication of an increase in the real costs of marketing. As in other industries, the costs of goods and services have increased. A rough guide in measuring

Table 3.—Annual Average Price Spreads for A Large Eggs, Six Canadian Cities, 1935-52

Year	Producer Price	Whole-sale Price Spread	Retail Price Spread	Producer to Consumer Spread	Producer Share of Retail Price	Producer Price	Whole-sale Price Spread	Retail Price Spread	Producer to Consumer Spread	Producer Share of Retail Price	
	— cents per dozen —						— cents per dozen —				
	—St. John, N.B.—						—Halifax, N.S.—				
1935	25.5	5.3	4.8	10.1	71.5	27.2	4.5	6.6	11.1	71.0	
1936	27.4	4.7	5.2	9.9	73.5	28.9	4.3	5.6	9.9	74.5	
1937	26.2	5.0	5.0	10.0	72.4	27.0	5.3	4.5	9.8	73.4	
1938	28.2	4.8	5.1	9.9	74.0	28.0	6.2	4.5	10.7	72.4	
1939	26.0	4.9	5.5	10.4	71.4	26.0	6.7	5.8	12.5	67.5	
1940	28.3	5.0	4.8	9.8	74.2	28.0	5.9	6.8	12.7	68.8	
1941	30.5	4.8	4.9	9.7	75.9	30.3	6.0	5.4	11.4	72.7	
1942	35.8	5.0	6.3	11.3	76.0	38.1	4.0	5.8	9.8	79.5	
1943	39.8	5.6	4.4	10.0	79.9	41.8	4.8	5.5	10.3	80.2	
1944	36.8	6.8	4.8	11.6	75.8	38.6	5.6	4.7	10.3	78.9	
1945	38.2	5.3	6.0	11.3	77.2	41.3	4.8	5.8	10.6	79.5	
1946	39.8	4.8	6.4	11.2	77.9	42.0	5.2	5.0	10.2	80.5	
1947	41.5	6.2	7.1	13.3	75.8	42.8	6.5	4.3	10.8	79.8	
1948	48.7	7.9	7.2	15.1	76.3	51.4	7.3	4.1	11.4	81.8	
1949	50.5	8.3	8.0	16.3	75.6	52.3	8.2	4.2	12.4	80.8	
1950	46.0	7.3	7.4	14.7	75.8	45.2	10.1	3.1	13.2	77.4	
1951	57.1	8.2	7.8	16.0	78.1	54.3	13.2	3.8	17.0	76.1	
1952	46.7	8.8	8.3	17.1	73.1	45.1	13.4	3.8	17.2	72.4	
	— Montreal, Que. —						— Toronto, Ont. —				
1935	27.0	4.0	4.6	8.6	75.8	23.9	5.2	5.6	10.8	68.9	
1936	28.6	4.3	5.2	9.5	75.1	25.7	4.8	5.8	10.8	70.4	
1937	26.2	5.0	4.7	9.7	73.1	23.9	5.2	5.1	10.3	69.9	
1938	28.2	4.8	4.8	9.6	74.6	26.2	5.0	4.8	9.8	72.8	
1939	25.8	4.9	5.1	10.0	72.1	23.1	4.7	4.8	9.5	70.9	
1940	28.8	3.5	4.8	8.3	77.6	27.1	3.2	4.1	7.3	78.8	
1941	31.0	3.4	5.6	9.0	77.5	30.0	3.1	4.5	7.6	80.0	
1942	37.7	2.8	6.2	9.0	80.9	36.7	3.0	6.1	9.1	80.2	
1943	41.9	2.8	5.6	8.4	83.3	40.4	2.5	6.2	8.7	82.3	
1944	38.3	3.7	4.1	7.8	83.1	37.6	2.7	5.2	7.9	82.6	
1945	40.4	2.9	5.3	8.2	83.1	39.9	2.6	5.6	8.2	83.0	
1946	42.1	2.0	6.2	8.2	83.7	41.0	2.7	6.3	9.0	82.0	
1947	42.5	4.3	4.9	9.2	82.2	42.2	3.6	6.4	10.0	80.9	
1948	51.8	4.0	6.3	10.3	83.4	50.7	3.1	7.1	10.2	83.3	
1949	52.7	3.8	6.7	10.5	83.4	51.0	3.9	7.6	11.5	81.6	
1950	45.7	5.6	5.8	11.4	80.0	43.9	6.3	7.2	13.5	76.5	
1951	58.2	7.7	7.7	15.4	79.1	56.7	7.5	8.0	15.5	78.5	
1952	46.2	7.8	7.9	15.7	74.7	44.2	7.7	7.8	15.5	74.0	
	— Winnipeg, Man. —						— Regina, Sask. —				
1935	21.7	6.0	4.7	10.7	70.0	20.2	4.5	5.4	9.9	67.1	
1936	23.8	6.1	5.2	11.3	67.8	21.1	5.0	3.4	8.4	71.5	
1937	22.8	6.9	3.8	10.7	68.0	21.1	5.0	4.6	9.6	68.7	
1938	22.8	7.4	3.8	11.2	67.0	21.4	5.2	3.9	9.1	70.2	
1939	19.8	7.1	4.1	11.2	63.8	20.2	4.6	3.8	8.4	70.6	
1940	20.9	7.8	1.6	9.3	69.2	21.3	4.8	3.3	8.1	72.4	
1941	23.3	8.2	2.3	10.5	68.9	23.4	4.3	4.5	8.8	72.9	
1942	29.9	7.6	4.5	12.1	71.4	30.0	4.4	6.1	10.5	74.1	
1943	33.8	7.2	3.8	11.0	75.4	32.8	5.3	5.9	11.2	74.5	
1944	33.8	7.3	3.8	11.0	75.4	31.3	4.8	5.9	10.7	74.5	
1945	31.4	8.8	2.4	11.2	73.7	32.8	5.8	5.5	11.3	74.5	
1946	33.6	7.4	3.9	11.3	74.8	35.0	5.6	5.8	11.4	75.4	
1947	35.8	6.6	4.5	11.1	76.3	36.3	5.9	6.4	12.3	74.7	
1948	37.1	8.1	3.3	11.4	76.5	43.5	5.8	8.5	14.3	75.2	
1949	43.4	8.8	5.4	14.2	75.3	42.8	8.2	5.5	13.7	75.7	
1950	43.2	8.8	5.4	14.2	75.3	38.3	9.6	4.8	14.4	72.7	
1951	47.8	10.7	5.6	16.3	74.6	48.0	10.7	6.0	16.7	74.2	
1952	35.5	10.5	6.4	16.9	67.7	35.5	10.9	5.8	16.7	68.0	

movements in the "real" cost of marketing is the General Wholesale Price Index. In relation to this index, the "real" cost of marketing eggs has declined from the 1935-39 levels. This was the result, in the main, of the reduced "real" margin at the retail level. The rise in the wholesale price spread since 1948 reflects a gradual increase in the "real" costs of wholesaling eggs although these still remain below prewar costs.

On the average, total price spreads tend to move more in line with the general price level than with the actual price of eggs. The result is that changes in prices of eggs are sharply reflected at the producer level. This is not unusual in food marketing where wholesaling and retailing costs tend to be inflexible.

Regional Variations in Price Spread.—Price spreads between cities in the same geographical regions vary greatly but some general conclusions can be reached when one particular region is compared to the other regions. Retail prices are generally the highest in the three Maritime Provinces and lower in the Prairie Provinces than in other parts of Canada. Total price spreads, except for the war years, were generally higher in the Maritimes with the Prairie Provinces running a close second, and the Central Provinces showing the smallest spread. This larger spread in the Maritimes and the Prairie Provinces was, for the most part, due to the higher spreads at the wholesale level. The farm share of the retail price, because of the higher marketing spread, is lower in the Prairie Provinces and the Maritimes than in Central Canada. Data for British Columbia are limited to the Vancouver area and in this area price spreads tend to conform with those for the central provinces.

Price spreads between regions were wider in the postwar years 1945 to 1949 than in any of the other periods under study because of the large quantity of eggs then purchased to fill the British contracts. The ending of the last contract in 1949 and the greater use of the oiling process for storing eggs brought about a better equalization of consumer and producer prices in the different regions.

Price spreads for different cities within the same regions vary considerably. Statistics for individual cities are presented in Table 3.

Figures on marketing price spreads are based on information provided by the *Poultry Products Market Report*.¹ This information is collected every week by poultry and egg inspectors. A range of prices is frequently quoted, especially for retail prices for which an average of this range is used. The weekly prices were averaged to obtain monthly figures. Yearly averages are simple averages of monthly figures, as weighting by either seasonal marketings or consumption resulted in only minor differences which would have little, if any, effect on the results.

Regional data consist of an average for some of the main urban centres in a region for which continuous information was available. Simple averages were used to derive the regional figures. National figures have been compiled from regional figures weighted by egg production in that region.

Month-to-Month Changes.—Production of A Large fresh eggs fluctuates considerably throughout the year and thus results in a marked seasonal variation in prices. Seasonal reductions in the volume of marketings and the resultant higher prices are generally accompanied by increases in the price spreads. The greater part of the actual price increase, however, is passed on to the producer. For example, the month-to-month changes in price spreads in the Toronto market show that, generally, the lowest price spreads occur in February and March and the highest in September and October. In the past few years, the change in the price spread between the highest and lowest points was about seven cents per dozen eggs. The larger part of the increased spread resulted from changes at the retailing level.

ECONOMIC FACTORS AFFECTING PRODUCTION AND DISTRIBUTION OF EGGS IN NEW BRUNSWICK

G. B. MURRAY

Two of the major objectives of an economic study undertaken in 1951 were: a) to determine the importance of poultry production in relation to other enterprises on New Brunswick farms; and b) to analyze those factors which contribute the most to success in the poultry business. This study was conducted by the Economics Division in co-operation with the Department of Agriculture of the Province of New Brunswick.

¹ Issued weekly by the Marketing Service, Canada Department of Agriculture, Ottawa.

Poultry in Relation to Other Enterprises.—Measured in grain-consuming animal units, the relationship between poultry population and total livestock population in New Brunswick is the same as for Canada as a whole. In the years immediately following the first World War, poultry made up about 12 per cent of the livestock population in New Brunswick as well as in Canada as a whole. Its relative importance then gradually increased and since the second World War it has represented about one-fifth of the total livestock population.

However, the increase in poultry production in New Brunswick has taken place under somewhat different conditions than in other parts of Canada. Since the end of the first World War livestock numbers, other than poultry, have remained fairly constant in Canada, except during the second World War when there was a rapid and considerable increase in hog numbers. In New Brunswick, on the other hand, numbers of all kinds of productive livestock other than poultry have been declining.

Throughout the past 25 years receipts from the sale of poultry and eggs in New Brunswick have remained fairly constant—about eight per cent of total farm income or 16 per cent of the total value of all animals and animal products sold. The importance of poultry is further emphasized by the fact that receipts from the sale of eggs and poultry during recent years have exceeded the combined value of receipts from fruits, vegetables and field crops other than potatoes. However, they have been less than receipts from the sale of animals, dairy products, potatoes or forestry products.

Numbers of farm chickens in the province have increased from slightly less than a million birds in 1911 to slightly more than 1.2 million birds in 1951—an increase of 35 per cent (Table 1).

The increase has been constant except in 1941 when numbers were below those for 1931. However, although farm chickens are raised more widely throughout the province than other livestock, changes in poultry numbers in various areas of the province have not followed the general trend. Substantial gains in poultry numbers

Table 1.—Livestock on Farms, New Brunswick and Canada, Census Years 1911-51

Year	Hens and Chickens		All Cattle		Sheep and Lambs		Swine	
	New Brunswick	Canada	New Brunswick	Canada	New Brunswick	Canada	New Brunswick	Canada
	— 000 head —							
1911.....	915	31,793	222	6,526	158	2,174	87	3,635
1921.....	986	41,125	230	8,370	188	3,200	76	3,324
1931.....	1,282	61,277	213	7,973	144	3,627	85	4,700
1941.....	1,102	58,995	207	8,517	92	2,840	68	6,081
1951.....	1,231	71,116	162	8,363	55	1,461	78	4,914

have been made in some areas in recent years while in other areas numbers have declined or remained about the same as forty years ago. In order to obtain a clear indication of these regional changes the province was divided into five areas as follows:

Area I —Charlotte County

Area II —Saint John County

Area III—Central New Brunswick—the counties of Carleton, York, Sunbury, Kings and Queens

Area IV—Northern New Brunswick—the counties of Victoria, Madawaska, Restigouche, Gloucester, Northumberland and Kent

Area V —Eastern New Brunswick—the counties of Albert and Westmoreland

Chicken numbers in Areas III and IV—Central and Northern New Brunswick—followed the provincial pattern; in Area II they declined between 1911 and 1921 but then began to increase; and in Areas I and V they declined between 1911 and 1921, increased in the 1920's and then declined after 1931 (Table 2).

Changes in poultry numbers are the result of a variety of problems faced by the poultry producers and these changes may also create further problems. Findings

Table 2.—Numbers of Domestic Fowl in Five Areas of New Brunswick, Census Years 1911-51

Year	Area					New Brunswick
	I	II	III	IV	V	
	— 000 head —					
1911.....	68	26	384	291	146	915
1921.....	56	17	406	363	143	986
1931.....	78	22	516	493	172	1,282
1941.....	46	28	440	433	155	1,102
1951.....	34	37	553	458	149	1,231

made following the 1951 study, however, indicate that the poultry industry is confronted with two fundamental problems. These problems relate to: a) the size of enterprise—a problem common to all areas but more acute in areas where commercial farming does not predominate; and b) the types of farming prevailing in particular areas. In areas where part-time farming was more widespread than commercial farming laying flocks were small and marketing problems were serious.

Information on farm organization was secured from 75 farmers, randomly selected from a list of farmers who had purchased a minimum of 200 mixed chicks or 100 pullets during the spring of either 1950 or 1951.

On the average, each farm had 16 animal units,¹ three of which were made up of poultry. Poultry was the main livestock enterprise on the farms studied in Charlotte county, a county with a topography that does not favour an extensive type of agriculture. The average farm had 11 animal units, nine of which consisted of poultry. In Areas IV and V, on the other hand, poultry was a much less important segment of the livestock enterprise, accounting for less than three of the animal units on the average farm. Poultry accounted for two of the 15 animal units in Area IV (Northern New Brunswick) and for 2.5 of the 19 animal units in Area V (Eastern New Brunswick). Corresponding figures for Area II (Saint John) and Area III (Central New Brunswick) were 3.4 of the 19 and three of the 16 animal units respectively (Table 3).

The small size of the poultry enterprise on most of the farms is further emphasized by the 1951 Census figures. According to these figures the average New Brunswick farm flock (hens and chickens) was smaller than that of any other province, except Newfoundland, the average for New Brunswick being 69 birds compared with a national average of 151 birds. In only two districts of the province, Market Areas II and III, (The Saint John River Valley) did the size of the average farm flock come close to the national average of 151 birds—158 birds per flock in Area II and 108 birds per flock in Area III.

Table 3.—Average Number of Animal Units per Farm on 75 New Brunswick Farms, 1951

Area	Total Animal Units	Poultry Animal Units	Poultry as Per Cent of Total Animal Units	Average Number of Layers Kept Throughout the Year
	— units —		per cent	No.
I Charlotte County.....	11	9.0	82	232
II Saint John.....	19	3.4	18	82
III Central New Brunswick.....	16	3.0	19	90
IV Northern New Brunswick.....	15	2.0	13	70
V Albert and Westmoreland Counties.....	19	2.5	13	79
Average.....	16	3.0	19	83

¹ An animal unit represents an average mature cow or its equivalent in other livestock from the standpoint of feed consumption and manure production.

Types of Farming.—Types of farming also play an important role in determining the size of the poultry enterprises within the different agricultural regions of the province.

According to the 1951 census there were 26.4 thousand holdings in New Brunswick described as farms, of which less than half (44 per cent) were classified as commercial farms. The remainder were classified as small-scale (33 per cent) and part-time farms (23 per cent). Data obtained from the Census corroborate the information obtained through the study of poultry production and distribution and indicate that poultry is more important as a source of farm income in areas where commercial farms are proportionately more numerous than in areas where part-time and small scale farms predominate.

About four-fifths of all holdings described as farms in the 1951 Census were located in Market Areas III (Central New Brunswick) and IV (Northern New Brunswick). These two areas included 81.4 per cent of the commercial farms, 82.2 per cent of the small-scale farms and 83.3 per cent of the part-time farms. The two areas differ in several respects; some of the most important differences concern the relative proportions of commercial and non-commercial farms. Poultry is more important as a source of farm income in areas where commercial farms are more numerous than non-commercial farms. According to the 1951 Census there were 7.8 thousand farms in central New Brunswick as compared with 13.9 thousand farms in Northern New Brunswick. In other words, there were about twice as many farms in Area IV as in Area III but the two areas differed markedly in the relative proportion of commercial farms. In Central New Brunswick, about two-thirds (63.6 per cent) or 5,000 of the farms were classified as commercial farms, whereas only 4.5 thousand or 32.4 per cent of the farms in Northern New Brunswick were classified as commercial farms. The remaining farms in Central New Brunswick (one-third) were classified as part-time and small-scale farms whereas two-thirds of the farms in Northern New Brunswick fell into this category. The study indicated that farmers in Central New Brunswick kept an average of 90 layers throughout the year, but farmers in Northern New Brunswick kept only 70. The 1951 Census emphasized this difference more sharply in that the average number of hens and chickens on all farms in Central New Brunswick was 108 birds compared with only 47 birds per farm in Northern New Brunswick.

These data point up the influence of off-farm opportunities for employment. In northern New Brunswick the fishing and pulp and paper industries have, in recent years, offered farmers remunerative side-line occupations. It is doubtful whether a small poultry enterprise, where labour returns are meagre, could offer farmers the same labour returns as either of these off-farm occupations.

Problems of distribution confront most producers and all egg marketing agencies throughout the province. These problems are closely associated with the two production problems: a) the predominance of small flocks and b) the large number of part-time farms, a problem which adds to the difficulties caused by the predominance of small flocks.

Marketing practices followed by New Brunswick egg producers are more closely associated with size of flock than any other factor. The size of flock has a definite influence on the type and number of buyers to whom eggs are sold. More egg-grading stations are located where large flocks are numerous, but where small flocks predominate, producers sell their eggs directly to consumers, retail stores and institutional buyers. During the period of flush production, when eggs are produced in excess of local needs, marketing agencies in areas of predominating small flocks do not usually move these eggs into commercial egg marketing channels or into storages. As a result, prices received by producers in these areas are lower during periods of surplus production than in areas where large flocks and egg-grading stations are more plentiful. It is evident that commercial poultry production has developed more rapidly in areas where wholesale egg buyers have established facilities for handling and distributing eggs.

Operations of wholesale egg buyers.—In 1951 there were 14 registered egg-grading stations operating in New Brunswick—only one less than the number originally registered in 1943. Since then the number of registered stations has ranged from 16 in 1944 to 14 in 1951; ten stations ceased operations between 1943 and 1951 but were replaced by new stations.

Wholesale egg buyers have been in business in the province since the turn of the century. However, the term "registered egg-grading station" has been applicable to wholesale egg buyers in New Brunswick only since 1940 when it became mandatory that eggs be bought and sold within the province under provisions of the Natural Products Act. Early wholesale egg buyers were independent produce merchants but in 1925 a farmers' co-operative egg and poultry marketing agency, The Maritime Co-operative Egg and Poultry Exchange, was organized. By 1951 there were six egg-grading stations owned and operated by producers' organizations and eight owned and operated by independent or other business organizations. The majority of these egg-grading stations were operated jointly with one or more other enterprises, and egg sales represented about five per cent of their total sales.

In this study it was found that all egg-grading stations, whether privately or co-operatively owned, were confronted with the problem of unused plant capacity. This in turn gave rise to other problems.

Unused Plant Capacity.—The problem of unused plant capacity was more acute in egg-grading stations situated outside Saint John than those in the city because stations in Saint John depended almost entirely on shipments of either graded or ungraded eggs from Nova Scotia or Prince Edward Island. For this reason the remainder of this discussion will be confined to problems confronting egg-grading stations dependent principally on receipts of ungraded eggs produced in New Brunswick.

At the time of this study there were nine grading stations operating outside the city of Saint John. An estimate of the present capacity of these stations was obtained from the operators and compared with actual ungraded receipts for the year. According to this estimate the nine stations operated at only one-quarter of capacity and all purchased graded eggs from outside the Province to meet the requirements of their retail distributors.

A similar comparison was made for the five-year period 1947-51. That is, receipts of ungraded eggs were compared with the plant capacity of the country stations operating in this period. Of the nine country stations operating in 1951, only four were registered in 1947, six in 1948, seven in 1949 and eight in 1950. The country plants operated at slightly under a third of capacity throughout the five years 1947-51. In 1947 and 1948 country plants operated at about a third of capacity (31 and 33 per cent); however, in the following year receipts fell to 23 per cent of capacity before increasing to 29 and 27 per cent in 1950 and 1951.

Seasonal aspects of this chronic problem of unused plant capacity further aggravate the situation. During the five-year period 1947-51 receipts of ungraded eggs at the country stations varied on the average from a low of 14 per cent of the total capacity of the plants in July to a high of 42 per cent in April. This sharp seasonal swing in ungraded receipts throughout the year gave rise to a further problem—the efficient use of the labour force.

In all of the country grading stations and in many of the stations operating in Saint John the egg grader was of necessity a most versatile individual. The egg grader, whether male or female, was usually required to perform a large number of other duties, from driving a truck to making butter. The variation in these duties depended, of course, on the type of business with which the egg-grading station was being operated as a joint enterprise. In brief, the low volume of receipts of ungraded eggs made it impossible for the operators of the majority of egg-grading stations to utilize either plant equipment or labour in the grading station efficiently. The manager of a dairy factory stated that "the egg department causes as much trouble as the milk department. If I could only be assured of receiving 60 cases of eggs per week I would be happy." It would appear that the wide variation in receipts of ungraded eggs at the country stations can be reduced only by an increase in the number of large commercial flocks in areas served by grading stations, and by producers taking greater advantage of the definite seasonal pattern of egg prices and marketings.

The records of one grading station located in an area where large flocks were numerous were studied in an effort to determine the reasons for the variation in receipts at grading stations. Bench records for the first week in April and the first week in May 1951 were compared with bench records in the first week in August when receipts were at a seasonal low. These figures indicated that the number of

Table 4.—Changes in Numbers of Shippers and Receipts of Ungraded Eggs at One Selected Egg Grading Station

Week	Month	Number of Shippers	Receipts of Ungraded Eggs	Proportion of Grade A Eggs
		Index—1st week of April equals 100		— per cent —
1st.....	April	100	100	81
1st.....	May	105	113	75
1st.....	August	55	55	81

shippers patronizing the station and receipts in the first week of April and May were about twice those in the first week of August. The relative quantity of Grade A eggs received in August was the same as that in April—81 per cent in the first week of April and 76 per cent in the first week of May as compared with 81 per cent in the first week of August. Generally speaking, there was no significant difference in the relative proportions of Grade A eggs in shipments from large and small shippers in any of the three periods (Table 4).

The fairly constant proportion of Grade A eggs passing through the selected grading station during the flush production season as well as during the first week in August may be attributed, to a great extent, to the marketing practices of the larger producers in the area. Large producers used more marketing outlets than small producers; their two most important outlets were retail stores and grading stations. Smaller producers, on the other hand, used the grading station only when alternative outlets were not available to them—particularly in the flush production period. During the spring months it is easy to maintain egg quality but findings made through the study indicated that quality had declined from 81 to 76 per cent Grade A as the season advanced from April to May. In August, however, the quality of the ungraded receipts was equal to that of April, when the weather was cool. The high quality of the August receipts can be attributed, in the main, to the fact that commercial flock owners continued to market eggs through the grading station at this time. The poultry enterprise, on these farms, was of sufficient size to warrant the extra care required to maintain egg quality during the greater part of the summer months.

It was previously noted that the average size of farm flock in New Brunswick is smaller than that of any other province of Canada, except Newfoundland. Studies made elsewhere in Canada and the United States show a close relationship between size of enterprise, management practices and labour returns to the farm operator. Small laying flocks do not provide as efficient use of labour as do larger flocks and do not yield sufficient income to merit the specialized attention of feeding, disease control, and management. For these reasons, many poultry specialists are recommending that farmers have either only a small flock of layers to provide their families' needs for eggs and chicken or have a flock of at least 400 to 500 layers which can be profitably managed on a commercial basis. Problems confronting commercial egg marketing agencies would tend to be lessened by such a development in New Brunswick. However, in areas where commercial marketing channels have not been organized and flocks are small, it is evident that the promotion of greater commercial production and the organization of commercial outlets must be simultaneous.

FARM PROGRESS OF WORLD WAR II VETERANS

R. A. BENEDICT

Postwar settlement of World War II veterans presented the Veterans' Land Act Administration with many problems. Once placed on a farm the veteran himself faced many problems. Increased mechanization and technological changes in modern farming have accentuated investment and reorganization problems. These problems are even more acute for the beginning than for the older-established farmer.

Table 1.—Average Disposition of Farm Capital on 15 V.L.A. Farms in the Red Deer-Lacombe Area of Alberta, 1946-1950

	December 31									
	1946		1947		1948		1949		1950	
	\$	per cent	\$	per cent	\$	per cent	\$	per cent	\$	per cent
Real estate.....	5,654	56	5,880	51	6,288	49	7,106	53	7,356	47
Livestock.....	1,112	11	1,578	14	2,119	16	2,231	17	3,418	22
Equipment.....	2,298	23	2,852	24	3,071	24	3,164	24	3,850	25
Grain, feed and supplies....	1,008	10	1,299	11	1,478	11	744	6	972	6
Total.....	10,072	100	11,609	100	12,956	100	13,245	100	15,596	100

In order to throw some light on these problems a study of postwar settlement was made among a group of V.L.A. settlers in the Red Deer and Lacombe area of central Alberta. The number of veterans who co-operated by giving records of their farm business in surveys carried on for the years 1946 to 1950 inclusive varied from 27 to 33. The information given by a group of 15 farmers was selected for this article because they supplied data for each of the five years during which the study was conducted. Although there were no partnerships in this group, some of the veterans received help through the co-operative use of machinery with relatives and neighbours.

As 1946 was the initial year for many of these farmers, no attempt was made to measure the financial progress in that year. By the end of 1946, however, most of the new settlers had their available resources organized and were ready to start full-time farming operations.

Farm Capital.—Real estate, livestock, equipment, and grain, feeds and supplies were the major components of the capital on these farms (Table 1). The real estate inventory, in spite of its steady increase in value, accounted for a smaller share of the farm capital in 1950 than in 1946. However, a revaluation of this inventory in accordance with the higher prices for farms which prevailed in 1950 would have modified this picture. The machinery inventory accounted for about the same proportion of the farm capital throughout the period. The livestock inventory at the end of 1950 represented twice the proportion of farm capital that it did in 1946; this was largely the result of much higher prices for cattle. The average number of animal units carried through the year had increased by 34 per cent on these farms between 1946 and 1950. A breakdown of the livestock inventory values showed that the greatest gain had taken place in the value of the cattle inventory (Table 2).

Table 2.—Average Livestock Values on 15 V.L.A. Farms in the Red Deer-Lacombe Area of Alberta, 1946-1950

—	Value at Dec. 31, 1946 ^a	1947 No. of A.U.'s ^b	Value at Dec. 31, 1947 ^a	1948 No. of A.U.'s ^b	Value at Dec. 31, 1948 ^a	1949 No. of A.U.'s ^b	Value at Dec. 31, 1949 ^a	1950 No. of A.U.'s ^b	Value at Dec. 31, 1950 ^a
	\$	\$	\$	\$	\$	\$	\$	\$	\$
Horses.....	66	1.8	97	1.9	80	1.4	53	1.4	53
Cattle.....	722	7.3	877	8.9	1,459	8.3	1,462	9.8	2,518
Hogs.....	266	4.2	548	6.6	515	6.1	664	7.0	793
Sheep.....					10				
Poultry.....	58	0.6	56	0.6	55	0.3	52	0.4	54
Total.....	1,112	13.9	1,578	18.0	2,119	16.1	2,231	18.6	3,418

^a The livestock values are the average end-year valuations of the livestock inventories for these 15 farms.

^b Animal units. These units are based on the average of the beginning and closing livestock inventories for the year, and in the hog enterprise the number of market hogs sold was also calculated and added to the average inventory. Animal units are computed on the following basis: 1 horse equals 1.0 A.U.; 1 cow, 1.0 A.U.; 1 heifer or steer, 0.7 A.U.; 1 calf, 0.3 A.U.; 1 sow or boar, 0.3 A.U.; a 200-lb. hog, 0.2 A.U.; and 100 poultry, 1.0 A.U.

Assets, Liabilities, and Net Worth.—Increases in assets and decreases in liabilities cause an increase in net worth, whereas decreases in assets and increases in liabilities result in a decrease in net worth. Assets, on the average, increased by \$1,425 in 1947, \$1,523 in 1948, only \$10 in 1949 but as much as \$2,288 in 1950. Liabilities decreased only in 1947, the decrease averaging \$154 per farm. They increased by \$5 in 1948, \$368 in 1949 and \$840 in 1950.

Calculation of changes in assets, liabilities and net worth, on a trend index basis, discloses some interesting developments. The real estate inventory increased by 30 per cent during the four-year period—mainly the result of clearing and breaking new land, improvements to buildings, and electrification of farms. This inventory was not revalued to the higher farm price level which prevailed in 1950. It would seem that an upward adjustment could quite safely be made on the basis of higher market prices for land; this could have been shown as income from revaluation and not from farm operations.

The livestock inventory increased by 207 per cent; this was brought about by increases in the livestock population and livestock prices. The annual livestock inventories were valued at current market prices. The equipment inventory increased by 68 per cent, mainly because of added machinery and of replacements of old by higher-priced machines. Depreciation of special machinery (tractors, trucks, combines, etc.) was calculated on the basis of original cost¹ except in those few cases where replacement costs had to be used because the original costs were not known. The general equipment inventory (plows, mowers, tiller combines, etc.) was entered on the books at market value and depreciated according to the diminishing balance method.²

The grain, feeds and supplies inventory fluctuated over the years, reflecting the variations in grain and other feed values and in the volume of grain and feeds held over at the end of each year. The decrease of four per cent in 1950 would indicate that about the same amounts of grains and feeds (supplies made up only a small portion of the inventory) were held on hand, as slightly lower prices prevailed in 1950 than in 1946.

All other assets, including household effects, bonds, life insurance, accounts receivable, cash bank deposits, etc., decreased in value by 22 per cent. One of the significant features of this inventory was a reduction in the amount of money held in bank balances and in bonds.

The overall effect of all these changes was to increase the total value of the assets by 46 per cent.

During the same period total liabilities also increased by 32 per cent. These increases were, primarily, the result of borrowing for the purchase of machinery, improvements to buildings and electrification of farms.

The combined effect of these changes in assets and liabilities was to give an average increase in net worth of 52 per cent from the end of 1946 to the end of 1950.

The ratio of assets to liabilities moved from 4.0:1 in 1947 to 4.5:1 in 1948, returned to 4.0:1 the following year and declined to 3.8:1 in 1950. These ratios indicate some measure of stability in the financial strength of the farms under study.

The change in net worth occurring from year to year is one of the most commonly used measures of the financial progress of a farm. How this measure should be interpreted depends largely upon the methods employed in the inventory valuations. An increase in net worth may be the result either of a rising price level or it could be brought about from income. A decrease in net worth, on the other hand, may result from lower inventory valuations due to price level reductions, operation of the business at a loss, or an income insufficient to meet farm living expenses.

¹ Depreciation on original cost or replacement cost was calculated on a gross depreciation rate and an allowance made for repairs to arrive at a net depreciation. A reducing-rate type of depreciation was used to arrive at the gross depreciation, e.g., combines: 1st year—18 per cent; 2nd year—16 per cent; 3rd year—16 per cent; 4th to 12th—15 per cent; and 13th and subsequent years—9 per cent.

² The diminishing balance method of depreciation means that a percentage of the remaining value is deducted each year for depreciation. A gross constant depreciation rate of 19 per cent was used and an allowance made for repairs to arrive at a net depreciation except for new general equipment which was depreciated at a net depreciation rate of 10 per cent of the original cost for the first year; the remainder became part of the general machinery balance for future depreciation. This system ensures that a balance should not disappear for the general machinery.

Table 3.—Average Net Worth Statement^a for 15 V.L.A. Farms in the Red Deer-Lacombe Area of Alberta, 1946-1950

	December 31				
	1946	1947	1948	1949	1950
	— dollars —				
Real estate.....	5,654	5,880	6,288	7,106	7,356
Livestock.....	1,112	1,578	2,119	2,231	3,418
Equipment.....	2,298	2,852	3,071	3,164	3,850
Grain, feeds and supplies.....	1,008	1,299	1,478	744	972
All other assets.....	1,268	1,156	1,332	1,053	990
Total assets.....	11,340	12,765	14,288	14,298	16,586
Total liabilities ^b	3,316	3,162	3,167	3,535	4,375
Net worth.....	8,024	9,663	11,121	10,763	12,211
Change in net worth.....		1,579	1,518	- 358	1,448

^a Includes changes in personal as well as in farm net worth.^b Assuming the terms of their V.L.A. contracts will be fulfilled.

An increased investment in the farm may become necessary to maintain the farmer's equity when a rise in the level of prices occurs. With a rise in the prices of the commodities he purchases the farmer may have to increase his liabilities to maintain his farm capital. A larger investment usually takes the form of an increase in the livestock and building inventories or in a reduction of the mortgage indebtedness.

The net worth of the 15 farmers had increased by \$4,187, on the average, from the end of 1946 to the end of 1950 (Table 3). This change came about partly by increased investment out of income and, in some cases, by the purchase of additional machinery or the replacement of worn-out by higher-priced machinery. Increased prices for livestock brought about an increase in livestock inventory valuations and, thus, an increase in net worth. There were increases in the number of livestock and on most farms improvements were made to land and buildings. Increases in net worth also came about through V.L.A. payments.

Farm Income.—The level of farm income varied over the four years and, as a result, the amount of income available for further investments in the farm and for

Table 4.—Average Level of Income on 15 V.L.A. Farms in the Red Deer-Lacombe Area of Alberta, 1947-1950

	Year Ending December 31			
	1947	1948	1949	1950
	— dollars —			
Gross farm income.....	3,721	4,398	2,666	4,883
Farm expenses (including depreciation).....	1,871	2,149	1,972	2,591
Net farm income.....	1,850	2,249	694	2,292
Increase of farm net worth ^a	1,598	1,511	- 276	1,513
Net personal drawings.....	252	738	970	779
Net farm income.....	1,850	2,249	694	2,292
Personal drawings.....	252	738	970	779
Outside income ^b	444	265	161	249
Unpaid labour and board of unpaid labour ^c	39	120	155	90
Available for family living ^d	735	1,123	1,286	1,118

^a Includes only the changes in net worth.^b Mainly payments from Family Allowance and waiting returns benefits.^c Deducted as an expense in calculating net farm income but added here to arrive at amount available for family living.^d Also includes interest charges.

personal expenditures fluctuated during this period. Most of the co-operating veterans kept records only for the farm business, and money spent but not accounted for in the farm accounts was then assumed to have been used for personal expenditures (Table 4).

The amount of money spent for family living was not closely related to net farm income, and in 1949 some disinvestment of capital was required to bolster the low net income of that year. In 1950, however, this disinvestment was recovered, and the farmers continued to add to investments in their farm businesses.

Labour income was obtained by deducting five per cent as an interest charge on capital. It varied from \$1,308 in 1947 to \$1,635 in 1948, and from only \$39 in 1949 to \$1,571 in 1950. Corresponding figures for labour earnings were \$1,770, \$2,180, \$692 and \$2,145 respectively.

Income Ratios.—The calculation of various income ratios offers another indication of the success achieved by the veteran-farmers.

The gross ratio indicates that percentage of the gross income which was absorbed by expenses. This ratio is a measure of the efficiency of the business and must be considered in relation to the size of the gross income. What may appear to be a favourable ratio when the size of the gross income is small may very well mirror a smaller net farm income than a seemingly less favourable ratio based on a larger gross income.

This type of ratio loses some significance in farming areas where yield and price variations lead to pronounced fluctuations in gross income from year to year. It then becomes necessary to read these ratios in conjunction with annual data on yields and prices. In 1949, for example, this ratio stood at 74 as compared to 50 in 1947, 49 in 1948 and 53 in 1950. Wheat, oats, and barley yields were much lower in 1949 than in any of the other three years.

The ratio of net to gross farm income is expressed as a percentage and shows how much of the gross income is represented by net farm income. This ratio, like the gross income ratio, must be related to the size of the gross income. A large profit margin with a small volume of business would, of course, yield a low net farm income.

The rate of turnover index, as used here, represents the gross income per one hundred dollars of average invested capital. The number of years it would take for gross income to equal average invested capital is another means of showing this same relationship.

An unfavourable relationship in these ratios could come about by inefficient farm management. However, low yields and low prices can also adversely affect these ratios. The unfavourable showing in 1949 could be traced directly to low yields. Because farm success depends so much on biological factors, sharp year-to-year changes can be expected in these ratios in areas of variable climatic conditions.

Conclusion.—The average increase of \$4,187 in net worth between the end of 1946 and the end of 1950 by these 15 veterans was brought about by several factors. Because of the rising level of prices all of this increase in net worth did not mean a corresponding increase in security and operating efficiency on their farms. Rising prices for machinery contributed to the larger investment necessary to maintain or increase farm mechanization.

Increases in the cattle inventory came about from purchases at higher prices or from building up stock from animals which had a high sale value. The average number of animal units carried on these farms was 34 per cent higher in 1950 than in 1946.

During this period, however, there was an increase in working capital parallel to the rise in prices. This increase in working capital was brought about by increased investment out of income supplied by the farm or money made available by creditors. On the average, a veteran owned 71 per cent of his total assets in 1946 and 74 per cent in 1950.

These increases in investment, in the veteran's equity in his own farm, and in the levels of living of his family have been the result of years of continuous and intelligent effort.

PUBLICATIONS OF THE ECONOMICS DIVISION

Seasonal Variation in Prices and Production of Livestock and Livestock Products. Schrader, F. M. and G. E. Woollam. Ottawa, April 1953. pp. 6 + iii + charts.

This statistical study includes: a Table indicating the seasonal indexes for eight different groups of livestock or livestock products and 33 charts presenting the seasonal indexes or the trends in seasonal indexes for livestock and livestock products.

A List of Published Material by Members of the Economics Division, 1930-1953. Ottawa, June 1953. pp. 44.

An extension of the bibliography published in the February 1950 issue of the *Economic Annalist*. It includes material written by members of the staff of the Economics Division, and published either by the Division or by other agencies.

The Influence of Prices on the Relative Consumption of Beef and Pork. Woollam, G. E. Ottawa, June 1953. pp. 9.

A statistical analysis and interpretation of the relationships between prices and the relative consumption of beef and pork in Canada from 1927-28 to 1950-51 inclusive.

Provincial Agricultural Legislation in Ontario and Quebec, 1953, Supplement and Consolidated Index. Matte, Viviane H. Ottawa, August 1953. pp. 15.

A supplement to Provincial Agricultural Legislation in Ontario and Quebec 1951, published in September 1952. It includes new legislation and amendments to existing legislation which have been passed since publication of the original bulletin, and a consolidated index of legislation reviewed in both bulletins.

UNITED NATIONS PUBLICATIONS

The Trust Territory of Somaliland Under Italian Administration. Technical Assistance Programme. New York, 1952. pp. ix + 343.

A "Report prepared jointly for the Government of Italy by an expert appointed by the United Nations Technical Assistance Administration and by experts appointed respectively by the Food and Agriculture Organization of the United Nations, the United Nations Educational, Scientific and Cultural Organization, and the World Health Organization".

Part One deals with *Land, Population and Economy* and includes chapters on: *Summaries and Recommendations*, and *Resources and the Economy of Somaliland*. Part Two is concerned with *Technical Reports of the Mission's Experts* and contains chapters on: *Livestock and Natural Pasture (Range)*; *Agriculture*; *Education*; and *Health*.

Cadastral Surveys and Records of Rights in Land. Food and Agriculture Organization. Rome, Italy. March 1953. pp. v + 67.

A paper which stresses the "importance of large-scale maps to the success of almost every activity in connection with agricultural and rural development". The topics covered include; *Land Surveys and Maps*; *Cadastral Maps*; *Air Survey and Cadastral Maps*; *Registers of Rights*; *Principles to be Followed in the Preparation and Maintenance of Records of Rights*; *Direct Advantages of Cadastral Surveys and Registration of Rights*; *The Place of Cadastral Surveys and Registration of Rights in Rural Development*; and *Doubts and Fears*. In the chapter on *Doubts and Fears*, the author discusses the "possibility of popular doubts and fears as to the effects of the introduction of a cadastre" and the "doubts and fears, especially as to cost" which may be entertained by governments.

The paper was prepared by Sir Bernard O. Binns, of the Land and Water Branch of the Agriculture Division of FAO.

Communal Land Tenure. Food and Agriculture Organization. Rome, Italy. March 1953. pp. v + 57.

The first two chapters, titled *Introduction and Definitions* and *Main Types of Communal Tenure*, respectively, are of an introductory character. The third chapter

is concerned with the *Origin and Description of Communal Tenures*, namely primary, secondary and tertiary tenures. In the fourth chapter the author discusses the *Advantages and Disadvantages of Primary and Secondary Communal Tenure*. His evaluation is primarily in economic and agricultural terms. The last chapter deals with the *Future Prospects of Communal Tenure*, on the premise that "by reason of its social value, its advantages outweigh its disadvantages".

The study was prepared by Sir Gerard Clauson, Consultant on Land Tenure of the Agriculture Division of FAO.

Soil Surveys for Land Development. Food and Agriculture Organization. Rome, Italy. March 1953. pp. xii + 110.

A monograph designed "to bring to the notice of governments responsible for the welfare of their individual countries the advantages of using modern methods of soil classification and mapping".

The editor, G. C. Stephens of the Land and Water Use Branch of the Agriculture Division of FAO, has secured material from 20 specialists from 15 different countries in his compilation of information on the following chapter topics: *The Purposes and Uses of Soil Classification and Mapping*; *Techniques of Soil Surveying and Mapping*; *The Soil Survey Report*; *Classifying Soils*; *Administration of Soil Classification and Mapping*; and *Suggestions and Recommendations*. The suggestions and recommendations relate to *New Soil Survey Organizations*, *Training of Soil Scientists*, and *The Co-ordination of Soil Classification*.

The Farm and The City. Food and Agriculture Organization. Rome, Italy. April 1953. pp. iii + 42.

A study designed to illustrate how the prosperity of the farmer and the prosperity of the city worker depend on each other. Relationships are studied and statistical information presented under the following chapter headings: *General View*; *Industrial Activity Affects Farm Incomes*; *Farm Incomes Change with National Income in Most Countries*; *Farm Incomes More Variable than City Incomes*; *International Trade Influences Farm Incomes*; *City People Depend on Agriculture*; and, *Distribution of Income Affects Demand for Farm and City Products*.

The Long-Term Contract. Commodity Policy Studies, No. 3. Food and Agriculture Organization. Rome, Italy. April 1953. pp. iv + 28.

This study is divided into three main parts. Part I explains what the contract is and describes its development, its importance in world food trade, its terms, and some recent developments. Part II considers the merits and demerits of the contract: its value as a technique for reducing fluctuations in prices and in real incomes of producers; its influence on price trends and production at the margin; and, its significance for parties to the contract and for third parties. Part III deals with the future of the contract, the factors making for its continuance and those suggesting a reduction in its use.

OTHER PUBLICATIONS

Farm Policies of the United States, 1790-1950; A Study of their Origins and Development. Benedict, Murray R. New York, The Twentieth Century Fund, 1953. pp. xv + 548.

A comprehensive record of the development of American policies relating to land tenure, government forests, soil conservation, production control, price supports, transportation, credit, co-operation, large-scale regional developments, and many other policies affecting agriculture.

The Canadian readers will be especially interested in the last eleven chapters dealing with: *Equality for Agriculture*; *The Hoover Period*; *From Defense to Attack*; *The Longer-Term Program*; *New Tactics, Revised Strategy*; *Program of the Late 1930's*; *War Changes the Emphasis*; *Food Program of the War Years*; *Postwar Boom and New Legislation*; *Changes in Long-Term Policy*; and *U.S. Farm Policies in Perspective*.

Economics of Agricultural Production and Resource Use. *Heady, Earl O.* New York. Pentice-Hall, Inc. 1952. pp. viii + 850.

This book goes a long way towards achieving a workable integration of the fundamental and applied aspects of the science of production economics. The author displays his humility as a scientist when he states in the Preface that his "book provides a skeleton of basic principles upon which problems in agricultural production and resource use can be analysed". Indeed most readers will agree that the skeleton is of a unique kind; its structural elements have vitality and are well joined together.

The author does not propound any new method or theory. But, he achieves considerable success in selecting and applying basic principles to the study of problems in agricultural production and resource use. These problems are studied from the viewpoint of both the individual farmer and society. The author recognizes that a sound analytical procedure cannot segregate the "firm" or individual aspects from the aggregative aspects of resource use.

The principles or tools developed by Heady are likely to lead to more significant results in research work in production economics and to enhance the economist's prestige in his dealings with researchers in the field of production technology.

In Part I of the book the author prepares the ground for an advanced analysis by a simple delineation of the field of agricultural production economics. In Part II he applies the "static" or "perfect knowledge" principles to the individual producing unit and to the inter-farm and inter-regional use or allocation of resources. He lays great emphasis on the functional, choice, allocation, substitution, combination, and returns to scale concepts as well as on resource valuation, firm-household inter-relationships and efficiency within the farm.

Part III is concerned primarily with the planning of production and resource use under conditions of imperfect knowledge. Heady deals with these conditions under the following five chapter headings: *Risk and Uncertainty in Agricultural Production; Role of Management and Expectations in Resource Administration; Adjustment of Production and Resource Use to Uncertainty; Instability, Capital Use, and Farm Size; and, Factor Pricing and Ownership Under Uncertainty*. In this part of the book attention is centered on the farm as a firm but the analysis also includes some of the "aggregate" and policy aspects of production planning.

These aggregate aspects of problems relating to agricultural production and resource use are discussed in Part IV. Heady makes effective use of the fundamentals of "dynamical" as well as "statical" theories in his analysis of the relationships between tenure systems and farming efficiency, of the location of production, the aggregate production and product supply functions, economic efficiency in the agricultural industry, the fundamentals of conservation and land use, and the impact of technological changes on economic progress.

Heady has synthesized for the production economist a voluminous body of concepts and theories which, before the publication of *Economics of Agricultural Production and Resource Use*, were scattered in a multitude of books, papers and journal articles. His main achievement, however, resides in the skill and clarity with which he has applied the basic and the more recently developed tools of economic research to the study of problems in agricultural production. Although the emphasis is on agricultural production, the principles discussed will be found to have relevance in all fields of production economics.

River on the Rampage. *Davis, Kenneth S.* Garden City, N.Y., Doubleday & Company, Inc. 1953. pp. 217.

A vivid dramatization of the losses in human lives and dollars which occurred when the mighty Kaw river of Kansas went on the rampage in 1950. Mr. Davis deplores man's abuse of the rivers, the waste of their wealth and that of the land in their basins.

He outlines methods of preventing waste and conserving water and soil resources and is particularly concerned with ways of dealing with public health, sewage disposal, water pollution, flood control and soil preservation.

THE ECONOMIC ANNALIST

A BIMONTHLY REVIEW OF AGRICULTURAL BUSINESS

G. P. BOUCHER, Editor

DECEMBER 1953

Vol. XXIII, No. 6

CONTENTS

	Page
The Economic Situation.....	123
Air Photograph Study..... <i>D. J. Packman and L. E. Philpotts</i>	126
Decline of Sheep Production in the Maritime Provinces..... <i>G. C. Refson</i>	128
United States Agricultural Policy and the Canadian Wool Position..... <i>M. Rachlis</i>	130
Marketing Channels and Methods Used by New Brunswick Egg Producers..... <i>G. B. Murray</i>	133
Farm Mechanization and Labour in the South-Central Red River Valley of Manitoba..... <i>J. G. MacKenzie</i>	138
Publications of the Economics Division.....	143
United Nations Publications.....	143
Other Publications.....	143

MARKETING SERVICE, ECONOMICS DIVISION

J. F. BOOTH, Chief

Published by Authority of the Right Honourable James G. Gardiner
Minister of Agriculture

ANNUAL AND MONTHLY INDEX NUMBERS
WHOLESALE PRICES, FARM PRICES AND LIVING COST INDEXES

Year	Wholesale Prices 1935-1939=100				Farm Prices of Agricultural Products 1935-39 = 100 (e)	Commodities and Services used by Farmers 1935-39 = 100		Cost of Living 1935-39 = 100		Consumer Price Index (1949 = 100) (j)
	(a) General Wholesale Index	(b) Farm Products	(c) Field Products	(d) Animal Products		(f) Equipment & Materials	(g) Eleven Factor Index	(h) Farm Living Costs	(i) Urban Living Costs	
1913.....	83.4					85.4		80.1	79.1	49.2
1914.....	85.4					90.2	85.3	82.3	79.7	49.6
1915.....	91.8					96.9	91.6	86.5	80.7	50.3
1916.....	109.8					101.7	100.5	93.7	87.0	54.2
1917.....	148.9					140.7	140.5	111.5	102.4	63.7
1918.....	166.0					164.1	160.2	131.1	115.6	72.0
1919.....	174.7					169.1	167.9	143.0	126.5	78.8
1920.....	203.2					190.1	186.5	171.3	145.4	90.5
1921.....	143.4					147.4	152.5	139.9	129.9	80.9
1922.....	126.8					124.6	134.1	127.9	120.4	74.9
1923.....	127.7					118.3	130.6	128.3	120.7	75.2
1924.....	129.5					122.3	131.9	125.5	118.8	74.0
1925.....	133.8					123.2	131.8	123.9	119.8	74.6
1926.....	130.3	144.4	158.5	130.2		119.9	130.6	121.1	121.8	75.9
1927.....	127.3	138.6	149.4	127.8		119.9	131.2	119.8	119.9	74.6
1928.....	125.6	136.3	134.3	138.2		118.3	129.3	118.5	120.5	75.0
1929.....	124.6	140.8	137.2	144.4		117.6	127.9	117.3	121.7	75.8
1930.....	112.9	119.5	105.8	133.3		105.6	117.0	113.7	120.8	75.3
1931.....	94.0	78.9	65.0	92.7		92.2	100.9	103.9	109.1	67.9
1932.....	86.9	65.5	60.4	70.5		89.3	93.3	97.8	99.0	61.7
1933.....	87.4	69.3	69.3	69.2		88.8	89.8	95.8	94.4	58.8
1934.....	93.4	83.5	80.5	86.5		96.8	95.5	97.9	95.6	59.6
1935.....	94.4	89.2	84.4	94.1	88.0	95.6	95.4	97.9	96.2	59.9
1936.....	96.7	97.9	102.2	93.7	96.9	98.7	98.1	98.3	98.1	61.1
1937.....	107.8	117.4	128.9	106.0	119.7	108.4	105.3	102.9	101.2	63.0
1938.....	102.0	102.9	100.9	104.8	105.0	101.2	101.7	101.9	102.2	63.7
1939.....	99.2	92.6	83.7	101.5	91.8	95.7	99.3	99.5	101.5	63.2
1940.....	108.0	96.1	85.4	106.7	96.8	101.8	106.8	108.5	105.6	65.7
1941.....	116.4	106.6	88.9	124.4	110.2	107.8	116.1	114.1	111.7	69.6
1942.....	123.0	127.1	109.7	144.6	133.1	119.2	131.6	119.0	117.0	72.9
1943.....	127.9	145.4	129.0	161.8	157.8	122.4	143.4	121.7	118.4	74.2
1944.....	130.6	155.3	144.5	166.1	172.4	126.0	148.0	122.8	118.9	74.6
1945.....	132.1	166.4	162.5	170.2	185.7	125.9	152.1	123.2	119.5	75.0
1946.....	138.9	179.5	177.9	181.2	204.1	128.0	157.0	127.1	123.6	77.5
1947.....	163.3	192.2	184.1	200.2	215.8	139.5	170.4	138.3	135.5	84.8
1948.....	193.4	232.1	200.6	263.7	255.8	173.1	197.4	162.8	155.0	97.0
1949.....	198.3	228.7	191.9	265.4	255.4	180.3	204.1	173.2	160.8	100.0
1950.....	211.2	236.7	191.9	281.4	260.8	189.9	210.4	177.6	166.5	102.9
1951.....	240.2	268.6	200.4	336.9	296.8	206.0	230.0	198.6	184.5	113.7
1952.....	226.0	248.7	219.9	277.5	272.2	215.8	243.1	210.0	187.5	116.5
1953.....						207.4	238.4	203.6		
Jan.....	221.5	226.4	186.4	266.4	258.1	207.7	231.7	202.6	184.4	115.7
Feb.....	220.9	222.6	182.1	263.1	254.1				184.9	115.5
Mar.....	221.9	220.8	177.3	264.3	252.5				184.2	114.8
April.....	219.6	214.5	173.0	256.0	245.5	208.2	241.3	203.4	183.9	114.6
May.....	220.1	216.9	170.6	263.2	246.5				183.6	114.4
June.....	221.7	219.3	169.9	268.8	254.8				184.8	114.9
July.....	221.2	219.2	173.1	265.3	250.0				186.0	115.4
Aug.....	222.4	213.6	157.2	269.9	240.4	206.3	242.1	204.9	186.4	115.7
Sept.....	221.5	208.9	154.0	263.7	235.4				186.3	116.2
Oct.....	220.7	209.2	152.2	266.3						116.7
Nov.....										116.2

(a) Canada. Dominion Bureau of Statistics, Labour and Prices Division. *Prices and Price Indexes*. (Mimeo.) Ottawa, Monthly.

(b) Ibid. (a). Wholesale prices of products of Canadian farms.

(c) Ibid. (a). Wholesale prices of grains, hay, tobacco and potatoes.

(d) Ibid. (a). Wholesale prices of animals and animal products.

(e) Canada. Dominion Bureau of Statistics, Agriculture Division. *Index Numbers of Farm Prices of Agricultural Products*. (Mimeo.) Ottawa, Monthly.

(f) Canada. Dominion Bureau of Statistics, Labour and Prices Division. *Price Index Numbers of Commodities and Services Used by Farmers*. (Mimeo.) Ottawa, Jan., Apr. and Aug. Includes prices of commodities in 8 groups including farm implements, building materials, gasoline, oil and grease, feed, fertilizer, binder twine, seed and hardware.

(g) Ibid. (f). Includes the 8 commodities indicated above plus tax rates, interest rates and farm wage rates.

(h) *Price Index Numbers of Commodities and Services used by Farmers*. Includes food, clothing, fuel, household equipment, health, maintenance and miscellaneous.

(i) *Prices and Price Indexes*. Includes food, rent, fuel and lighting, clothing, home furnishings and services, miscellaneous and retail prices of commodities.

(j) Canada. Dominion Bureau of Statistics, Labour and Prices Division. *Price Movements*. (Mimeo.) Ottawa, Monthly.

THE ECONOMIC SITUATION, 1953

Year-End Review.¹—A generally even balance of market forces, a continued economic expansion, and an effective restraint of inflationary forces characterized Canadian economic life during 1953. This situation resulted from a shift in the pattern of demand. The defence program continued to act as a strong support to the economy but was a sustaining rather than the expansive factor it had been in 1951 and 1952. This change in the economic impact of the defence program took place at a time when consumer demand, strengthened by a steady rise in real income, had begun to act as the main expansive force in the economy. The strong trend in the domestic market in the last half of 1952 continued in 1953 and fostered a firmer tone in the market than that which prevailed throughout the earlier part of 1952. This stronger domestic trend supplied an incentive to capital investment, particularly in the non-defence industries. Foreign demand, on the other hand, fell off slightly, mainly as a result of lower sales in European and Latin American countries.

Canada's Gross National Product in 1953 is now expected to be about five per cent above that of 1952. Average prices do not differ much from those in 1952 and the entire increase in the Gross National Product will thus represent an increase in volume.

Income.—The continuing high level of economic activity is reflected in the income components of the Gross National Product. Labour income for the first seven months of 1953 was ten per cent higher than in the corresponding period of 1952. This was the outcome of a small increase in employment and sizeable increases in wage rates. Average hourly earnings, one of the best indicators of the basic wage structure, have continued to advance. At July 1, 1953, average hourly earnings in manufacturing industries were six per cent above what they had been at the same date in 1952; increases in other industries ranged from that for mining, which was up four per cent, to that for building construction, which was close to ten per cent higher. The trend in basic working hours has continued downward but more overtime and less short time, particularly in manufacturing, have resulted in slightly longer

working hours in 1953. Higher basic rates and a longer work week have contributed to a steady rise in average weekly earnings to their present peak. At July 1, 1953, average weekly salaries and wages stood at \$57.58 compared with \$53.96 at July 1, 1952.

A major change in the income pattern from 1952 to 1953 was the significant decrease in agricultural income from the very high level of 1952. The very large grain crop of 1953 did not reach the record one of 1952 and farm prices have continued the decline which began early in 1952.

Income from other sources, however, will be greater in 1953 than in 1952. Corporate profits appear to have been moderately higher in the early part of the year as a result, presumably, of a weaker pressure from rising costs and a larger volume of production and sales. The income of unincorporated professions and businesses also reflects the high level of economic activity.

Personal disposable income has increased moderately as a result of an increase, in the aggregate, of personal incomes, and of a slightly lower personal income tax rate.

Investment.—The mid-year survey of investment intentions indicated that capital expenditures for new construction, machinery and equipment would be nine per cent higher in 1953 than in 1952 and that, with only minor price changes, the volume increase would approximate the value increase.

There has also been a significant change in the composition of the investment program. The strength in capital spending is now concentrated in the housing and in the trade and service groups. Mining and resource development projects continue to be important but the increase in investment is more prominent in those sectors where investment had previously been postponed because of the shortage of steel and government measures designed to discourage, for the time being, less urgent forms of construction.

Exports.—Canadian exports continued at a high level in 1953 but a reduction in sales in some overseas markets caused a decline in total export trade from the

¹Based on a review of the domestic situation prepared by the Domestic Situation Committee of the 1953 Federal-Provincial Agricultural Conference.

peak level of 1952. Merchandise exports for the first eight months of 1953 totalled \$2,765 million, three per cent less than in the corresponding period of 1952. Prices also declined three per cent; so, the volume of exports did not change. On a geographical basis the principal declines occurred in sales to Europe and Latin America whereas the value of shipments to the United States increased eight per cent. Commodities which have shown the largest reductions included wheat, wood pulp, trucks and automobiles, and farm machinery.

Imports.—Total imports in the first six months of 1953 amounted to \$2,217 million, an increase of 14 per cent over the corresponding period of 1952. Imports from the United States increased 15 per cent and accounted for most of the total increase. Imports from the United Kingdom into Canada were 36 per cent higher as a result of larger shipments of textiles, machinery and consumer durable goods. The strength of the consumer demand and defence and other investment programs accounted for the heavy inflow of goods, particularly from the United States.

Consumer Expenditures.—The continuation into 1953 of the high level of consumer purchasing which prevailed in the last half of 1952 has proven to be a major factor in sustaining the Canadian economy. Practically all of the post-war backlog has been filled and the current demand is being sustained by the high level of current income. The decline in net farm income has not seriously affected the level of consumer spending. At the same time lower consumer prices have increased the real purchasing power of the consumer by at least another two per cent.

Sales of all types of goods have expanded as a result of increase in demand. Perishable goods began to pick up in 1952 and have displayed added strength in 1953. In the first six months of this year sales of perishable goods, as indicated by retail sales statistics, were three per cent larger in value and more than five per cent in volume than in the corresponding period of 1952. The more widespread retail price declines have occurred in perishable goods and clothing, and have been a significant factor in the upswing in spending in these sectors. In the 12-month period ending August 1953, the total consumer price index was only about one per cent below that for the preceding 12-month period but food

prices were down five per cent and clothing prices down to almost three per cent.

Employment.—With the exception of forestry and a few minor weak spots in manufacturing, the demand for labour continued to be strong in 1953. The large pulpwood inventories built up in the 1951-52 cutting season and the weak demand for pulpwood caused a sizeable reduction in employment in forest industries during the winter. The late spring in many parts of the country also resulted in lower employment in construction in the earlier months of the year. However, the demand for workers in manufacturing, trade and services has generally been strong and the latest statistics show industrial employment to be up about three per cent over 1952. The shift of workers out of agriculture is continuing. This movement of workers into the non-farm sector and the absorption of a steady flow of immigrants have taken place with little change in the numbers of unemployed.

Fiscal and Monetary Developments.—In the 1953-54 Budget, provision was made for an approximate balance between revenue and expenditure, after a number of tax reductions. Although forecast expenditure was higher than in the previous year, a balanced budget linked with tax reductions was considered to be a possibility because of an anticipated increase of four per cent in the Gross National Product. Among the more important tax reductions is the repeal of the existing personal income tax rates and the re-enactment of the 1950 rate schedule, resulting in a reduction in personal income tax to the average taxpayer of a little more than 11 per cent after July 1.

The expansion of chartered bank loans which began in 1952 continued during 1953. Consumer debt remained a dominant factor in this increase but there has been evidence of an increased volume of loans to business for purposes of inventory accumulation and capital expansion. The growth of consumer debts occurred at a time of plentiful supplies of those consumer durable goods which are generally bought with the help of credit. Although personal liabilities have increased during the year, a high level of net personal savings appears to have been maintained. Business, in addition to bank borrowing, has continued to rely on retained earnings, depreciation allowances and borrowing from the capital

market to finance inventories and the record level of capital investment. Net new issues of corporate bonds and stocks payable in Canadian dollars have tended to run at about the same level as in 1952.

Farm Income.—It is estimated that farm net income from farming operations during 1953 will be about 12 per cent below the 1952 level. This estimate is based on information available about mid-September. Contributing largely to the reduction in farm net income were the smaller receipts from the sale of farm products and a reduced value of inventory changes of farm-held livestock and grains. Offsetting these declines, to a very limited extent, was a slight reduction in farm operating expenses.

Income from the sale of livestock is expected to be somewhat lower in 1953 than in 1952. In the case of cattle, calves, sheep and lambs, anticipated higher marketings will likely be offset or more than offset by lower prices. On the other hand, lower marketings of hogs will more than counterbalance substantially higher prices.

Receipts from dairy products for 1953 are estimated at slightly above those secured in 1952; increased production more than offset lower prices. Larger marketings and higher prices have combined to provide an estimated income, from the 1953 sale of eggs, substantially above the 1952 level.

Total operating expenses and depreciation charges may be slightly lower in 1953 than in 1952. Somewhat smaller grain crops this year will be reflected in reduced share-rent payments. Farmers' outlay for livestock feed is expected to be smaller. So far this year, shipments of feed grains under the Federal Freight Assistance plan and farmers' purchases of prepared stock and poultry feed have been below the 1952 levels. In addition, 1953 prices have been, on the average, somewhat lower than in 1952. Western farmers were not, as in the previous year, faced with the added expense of spring-harvesting large quantities of over-wintered grain. In the case of the remaining expense items, it was estimated that they would remain unchanged or at the most increase only slightly above last year's level.

Year-end inventories of both grain and livestock will likely be higher than in 1952. However, the increases in both grains and livestock in 1953 are not likely to be as great as in 1952. The prices used to value the change in livestock numbers are lower than in 1952. The net result

will be a positive value of inventory change somewhat smaller than that of last year.

Farm Production.—A preliminary estimate indicates that the index of Canada's agricultural production in 1953 will be nearly 15 per cent below the all-time high of 165.0 set in 1952. The substantial drop in production as compared with 1952 is largely attributable to the smaller western grain crop. Some reduction in the overall production of livestock is anticipated as a result of the significant decline in the output of hogs.

Farm Prices.—The use of initial prices for western grains in the construction of the index numbers of farm prices of agricultural products so far this year renders comparisons with 1952 extremely difficult; prior to August 1952 western grain prices used in the construction of the index were final prices. However, even if the final payments per bushel for this year equalled those of 1952, the index for the first seven months would be from five to ten percent below last year's level. The decline so far this year is largely attributable to significant reductions in the prices of livestock and potatoes and a minor reduction in the price of dairy products. These declines have been offset to some extent by substantially higher egg prices. Assuming that the present level of the index can be maintained for the remainder of the year, it is estimated that the annual average for 1953 will be about five per cent below the 1952 average.

Prices of Commodities and Services Used by Farmers.—Prices paid by farmers for commodities and services used for production and for living costs in 1953 were slightly more than two per cent below the level set in 1952. Wage rates advanced fractionally during the year but lower prices were registered for farm family living costs, and equipment and materials used in farm production.

Farm Price Support Activities.—Throughout the year the Agricultural Prices Support Board has been engaged in disposal programs resulting from the stocks of livestock products accumulated up until the United States embargo on shipments to Canada was lifted in March 1, 1953. Despite heavy sales in the domestic market, as at October 15 the Board still held substantial stocks of canned pork. The Board has been active in stabilizing the price of hogs, eggs, butter, dry skimmed milk and cheese during the year. The support for cattle was withdrawn after March 1, 1953.

AIR PHOTOGRAPH STUDY

D. J. PACKMAN and L. E. PHILPOTTS

Air photographic analysis is a recent scientific development. When properly handled it serves as a powerful tool in securing a great deal of the data which are needed in planning the use and development of natural resources. Greater use of this method in making economic surveys has been advocated from time to time in the past, but never before have conditions been so favourable for such an undertaking as they are now, especially because of the extensive wartime experience with air photography.

General Uses of Air Photographs.—Air photography was first applied on a practical scale during World War I when it was used to detect camouflage, to locate enemy positions and to produce mosaics.¹ Since World War I it has been used in Great Britain and in North America for the preparation of topographical maps.

Canadian topographical survey, forestry and geological agencies have used air photographs since the early 1920's. The Topographical Surveys Branch of the Department of the Interior photographed an area at Pelican Lake, Saskatchewan in 1922 and quickly discovered that, by using air photos, vast areas could be mapped faster, more accurately and with less ground travel than was required by other methods of mapping. Timber estimates made in 1923 aroused extensive interest so that today the forestry interpreter is able to type trees, measure heights and give timber estimates from an interpretation of air photographs. The geologist has likewise extended his knowledge so that he is now able to designate, upon a photograph, particular geological features such as faults, folds, etc. and by limited ground checks he is able to further his interpretation, thus saving much time and travel.

Canada has several classical firsts in the field of air photography, such as the oblique plotting grid and the shadow system for calculating tree heights. Many improvements in air cameras and lenses, in plotting instruments and interpretational research have been developed and used both during and after World War II.

Today, however, air photographs have a more direct application to various types of economic surveys, in providing qualitative and quantitative information on natural resources and land utilization. For example, in the United States very large areas have been photographed by the Department of Agriculture for a wide variety of uses by its agencies. A few of the more important uses include: the production of planimetric and topographic maps for geological surveys; forest classification and inventory; land classification, land use planning and range surveys; soil mapping for soil surveys; and field measurements for crop acreage adjustments by the Agricultural Adjustment Administration, for which air photography has been developed as the most economic and accurate method of checking performance under its farm programs. Similar developments have taken place in Canada and in many European countries.

The possibilities of air photography are virtually unlimited. A few more of the common agricultural uses presently being made of air photographs are for: drainage and watershed projects; flood control projects; reservoir and dam site systems; and irrigation developments.

Air Photos in Agricultural Economics.—The Economics Division of the Canada Department of Agriculture has made extensive use of air photographs. The first major undertaking in which air photos were used was the program of economic land classification in Western Canada.

It was found that the photographs were of considerable assistance in the actual mapping of the areas under investigation. They made it possible to distinguish cropland from unimproved land in each holding. These photographs were then used for

¹ A mosaic is an air photo map formed by joining several overlapping vertical photographs. Uncontrolled mosaics are simply those in which the separate prints have been matched together as well as possible without correction, ground control or careful orientation. The controlled mosaic is elaborate and difficult to prepare since it is meant to present a very accurate map of the terrain. The uncontrolled mosaic is generally used for economic studies.

office interpretation and greatly assisted in the preparation of an economic land classification map when based on the data provided in soil and topographical maps and on economic information relating to the area. Air photos have generally been used in a similar manner in development of an economic classification for Eastern Canada. However, in a current study mosaics are used in the preparation of base maps, and stereoscopic pairs of photographs are used to supply more minute detail. Air photos have also been used to supply up-to-date information on the location of farmsteads for area sampling, to obtain details for individual farm planning or appraisal, to estimate flood damage and supply land use information for proposed new areas of settlement.

Most specialists in the various fields of agricultural economics may find air photographs useful and those engaged in land use planning will find them helpful in their work.

By making a mosaic of an area using stereoscopic photos, one is able to study how certain characteristics of farms, ranches and forest cover vary in a geographic pattern. As a land economist is seldom a specialist in other fields, it is usually necessary for him to work with a soils specialist, geologist or a trained forestry man to obtain the best possible interpretation.

It is usually necessary to do a certain amount of field survey work to make ground checks on the interpretation of the photos and secure some economic data on an area. One may obtain a list of the location and size of farm units, plot them on a mosaic and interpret the variations in a geographic pattern. By plotting land use, soil types, land values, financial returns and other pertinent data on a mosaic of a given area, it is possible to make an economic classification of the farms in the area. This procedure is not very different from previous methods of making land utilization studies in the Eastern United States. It has the advantage, however, of reducing to a minimum the time-consuming and costly field work. Recent photographs covering the agricultural areas of Canada may be obtained for a nominal fee from the National Air Photographic Library, Department of Mines and Technical Surveys in Ottawa. This type of information is also very useful in economic studies where inventories of the physical resources of a given area are required.

When settlement of a new area is proposed, it is usually considered necessary to assess the present physical and future economic resources. Through the interpretation of air photographs, soil specialists may assess the quality of the soil and the acreage of land available for settlement. The economist may then appraise the soundness of a given project in terms of anticipated returns to settlers.

Air photographs are also used in the management and sale of properties acquired by counties at tax sales. "We find that they aid greatly in determining values. In many instances more can be gotten, and better judgments formed, from an hour's study of an air photograph than from a day's inspection on the ground."¹

Another use which has been made of the air photo is in the selection of a sample of farms. In many areas, maps of the required degree of precision are not available. In such cases it is possible, with the aid of an air photo, to determine the number and the location of farms, for sampling purposes.

There are numerous other situations where the economist, the agronomist and the soils specialist may use air photos to obtain information for land use planning.

Current Study in Eastern Ontario.—In recent years there has been a renewed interest on the part of the agricultural economist in air photographic interpretation. To acquaint the novice with a few basic fundamentals in this field of interpretation, a study is currently being conducted by the Economics Division, Canada Department of Agriculture. This Division will release a publication which will include a series of reference photographs (stereoscopic pairs) of the most common crops in Eastern Ontario, and a description of the elements of photographic record such as texture, shadow and outline, which may serve as a guide in the interpretation of land use in the agricultural areas of Eastern Canada.

¹ *Air Photographs*. "Pennsylvania Planning" series, Vol. 9, No. 3. Harrisburg, Pennsylvania Dept. of Commerce, State Planning Board. 1944. p. 10.

DECLINE OF SHEEP PRODUCTION IN THE MARITIME PROVINCES

G. C. RETSON

During the past seventy years there has been a marked decline in sheep production in the three Maritime Provinces. Most discussions of the industry include some reference to the reduction in numbers of sheep on farms and to factors which have contributed to it. Relatively little emphasis is given to the actual rate of decline, which is probably more rapid than is generally recognized.

There were only about one-quarter as many sheep on Nova Scotia farms in 1951 as there had been in 1871. If the average annual rate of decline from 1881 to 1951 continues, sheep will disappear from Nova Scotia farms in about 24 years. If the more rapid rate of decline between 1921 and 1951 is maintained, the disappearance will occur in about 15 years. Data on sheep numbers for 1871 in Prince Edward Island are not available but the trend from 1881 is very similar to that in Nova Scotia and New Brunswick.

This projected downward trend in sheep numbers is, of course, somewhat unrealistic. As the trend curve approaches zero it tends to flatten out. However, unless some change develops to check the decline in sheep numbers the enterprise may soon reach a position of negligible importance in the Maritime Provinces.

This decline in sheep numbers is attributed to various causes. One of those most frequently mentioned is losses to predatory animals. In the Maritimes the animals mainly responsible are dogs, bears, and foxes. With the exception of foxes it seems doubtful that losses from these animals are more serious than those suffered prior to 1881.

Table 1.—Numbers of Sheep on Farms in Nova Scotia, Prince Edward Island and New Brunswick, Census years 1871-1951

Year	Number of sheep		
	Nova Scotia	Prince Edward Island	New Brunswick
1871.....	398,377	.....	234,418
1881.....	377,801	166,496	221,163
1891.....	331,492	147,372	182,941
1901.....	285,244	125,546	182,524
1911.....	221,074	91,232	158,316
1921.....	272,024	39,675	187,536
1931.....	196,344	41,322	143,677
1941.....	138,209	48,882	92,556
1951.....	95,396	34,386	55,223

Source: Canada, *Census of Agriculture*, 1871-1951.

Data on losses of sheep and lambs according to various causes are available from a study of sheep production currently being conducted by the Economics Division and the Nova Scotia Department of Agriculture and Marketing. The study includes data on the operations of 99 sheep flocks in Nova Scotia for the twelve-month period ending October 31, 1952.

Farms included in the study lost a total of 40 sheep and 53 lambs or an average of about one sheep or lamb per flock to predatory animals. This represents 17 per cent of total sheep losses, and 11 per cent of all lambs lost. Sixty-five per cent of lamb losses occurred at or shortly after birth. Thus, losses to predatory animals were minor when compared to losses attributable to management.

Another reason given for the decline in sheep numbers is the cost of fencing. Fencing costs have probably increased to a much greater extent than losses to predatory animals during the past 80 years and would thus constitute a more important factor in the decline in sheep numbers.

In addition to increases in the costs of wire and labour, other influences have contributed, indirectly, to higher fencing costs. Some of the older farmers recalled that common pasturing of sheep was practised to a larger extent in the earlier years

with a consequent saving in the cost of fencing. In some cases bushland along the border of adjacent farms, which was either accidentally or purposely burnt over every few years, provided a common sheep pasture. Possibly because of increased emphasis on fire control and higher returns from lumber and pulp, such areas are currently growing up with brush.

The decline in sheep numbers has contributed to higher fencing costs. Fencing is usually a two-farm proposition. When one man goes out of sheep his neighbour is often faced with increased sheep fencing costs. Farmers interviewed were generally agreed that fencing costs had contributed to the decline in sheep numbers. A number, however, suggested that this influence tended to be exaggerated. They said that if fences were reasonably well maintained the annual cost was not a serious problem. When fences had been allowed to deteriorate to the extent that a heavy investment was required, the sheep flock usually disappeared from the farm. Current costs of fencing were also a strong deterrent to those interested in adding the sheep enterprise to their farm business.

On individual farms, losses from predatory animals and costs of fencing have undoubtedly been important factors in the reduction or elimination of the sheep flock. However, it is possible that other reasons less frequently mentioned have played an important part.

One of these reasons mentioned by farmers was the general decline in agricultural production in sheep-producing areas. In Nova Scotia, for example, the main sheep-producing areas are located in the eastern end of the province where there has been a considerable amount of farm abandonment in the past 70 years. In Inverness County, where 29 per cent of the sheep in Nova Scotia are located, there has been a reduction of 42 per cent in the number of occupied farms during the past 40 years.

Table 2.—Losses of Sheep and Lambs According to Cause, 99 Flocks in Nova Scotia, 1952

Cause	Sheep		Lambs	
	No.	per cent	No.	per cent
Lost or stolen.....	7	3	16	3
Bears and foxes.....	5	2	25	5
Dogs.....	35	15	28	6
Disease.....	38	17	30	7
Accidents.....	76	33	37	8
Lost at birth.....			306	65
Old age.....	38	16		
Other.....	33	14	28	6
Total.....	232	100	470	100

Changes in type of farming have probably also contributed to the decline in sheep numbers. Sheep production is generally associated with mixed farming. Where more specialized types of production have developed the sheep enterprise has tended to disappear. When, as in the case of fluid milk production, there is some conflict between the enterprises the decline in sheep population is accelerated. The lack of definite breeding programs and the tendency to minimize the amount of attention given to the flock are other factors which have handicapped sheep raising in competition with other enterprises.

Despite the rather discouraging long-time trends in sheep production in the Maritimes, fieldmen encountered a considerable amount of enthusiasm on the part of sheep producers. During 1952 farms in the study carried over 32 per cent more ewe lambs than in 1951. There was an overall increase of seven per cent in numbers of breeding ewes. Forty-two of the 99 farmers included in the study planned some additional increase in the size of their flock but only five farmers expected to reduce the size of their flocks.¹

¹ Data on costs, returns and management practices will be presented in a subsequent article.

UNITED STATES AGRICULTURAL POLICY AND THE CANADIAN WOOL POSITION

M. RACHLIS

Future policy with regard to United States imports of agricultural products was foreshadowed on May 6, 1953 when U.S. Secretary of Agriculture, Ezra Taft Benson appeared before the Committee on Ways and Means and stated:

I am sure the Congress would not enact a statute making mandatory the support of the world price of agricultural commodities at 90 per cent of American parity. Yet that is what the present mandatory supports mean if we do not have a readily available and effective method of controlling imports of those commodities or products whose prices are maintained here above world levels by price support or marketing order programs. Our price support activities, already costly, would become much more expensive.

In recognition of the fact that a stimulation of imports can impose an intolerable burden on a price support program, the Congress enacted section 22 of the Agricultural Adjustment Act. This section provides for the imposition of import quotas or import fees whenever imports of any agricultural commodity or product thereof render or tend to render ineffective or materially interfere with any price support or marketing order (or certain order) program.

In the same statement, Mr. Benson used wool as an example and told the Committee that:

Wool price support is mandatory at such relation to parity between 60 and 90 per cent as determined necessary to encourage an annual production of approximately 360 million pounds of shorn wool. Current production is considerably below this goal and wool is currently being supported at 90 per cent of parity.

... Imports of foreign wool have been received in large quantities and the marketing of domestically produced wool has been materially retarded. Commodity Credit Corporation presently holds under loan about 100 million pounds of 1951 and 1952 crop wool, representing almost half of the 1952 production. In the twelve months ending December 31, 1952, imports of wool have been 300 million pounds (actual weight basis), dutiable wool. We are simply immobilizing our domestically produced wool and it is being replaced by imports.

**Table 1.—Wool Production in Canada, Averages for 1935-39 and 1948-52
and Annual Figures for 1945-52**

	Production of Wool		
	Shorn	Pulled	Total
	—000 lb. (greasy basis)—		
Average 1935-39.....	12,243	3,779	16,022
1945.....	14,513	5,113	19,626
1946.....	11,457	5,290	16,747
1947.....	10,176	3,914	14,090
1948.....	8,423	3,492	11,915
1949.....	7,759	2,076	9,835
1950.....	7,904	1,627	9,531
1951 ^a	5,700	1,182	6,882
1952 ^a	6,378	1,313	7,691
Average 1948-52.....	7,233	1,938	9,171

^a Figures for 1951 and 1952 have been revised on the basis of the 1951 Census; years from 1945 may not be comparable with 1951 and 1952.

Source: Dominion Bureau of Statistics, Ottawa.

On July 9, 1953 President Eisenhower requested the Tariff Commission to institute an investigation of the effects of wool imports on the domestic (U.S.A.) wool support program, as authorized under section 22 of the Agricultural Adjustment Act of 1933, as amended. The President asked that a report be submitted as promptly as possible so that a decision could be made during the 1953 marketing season.

If, after investigation, the Tariff Commission finds that imports of wool "render, or tend to render ineffective or materially interfere with" the present price support program, the United States may impose quotas or import fees on wool imported into the United States.

Canada has an interest in the outcome of the studies being made by the Tariff Commission, because in recent years (1948-52) about 42 per cent of her production has been exported, and three-quarters of these exports were to the United States. That is, in the past five years the United States has provided a market for about one-third of the wool produced in Canada.

Production.—Canadian wool production averaged about 9.2 million pounds annually in the five-year period 1948-52. In the period 1935-39 the average annual

Table 2.—Wool Exports from Canada to the United States and Other Countries, Averages for 1935-39 and 1948-52 and Annual Figures for 1945-52

	Exports of Wool			Exports to U.S.A. as a Percentage of Total Exports
	To U.S.A.	To Other Countries	Total	
	—000 lb. (greasy basis)—			—per cent—
Average 1935-39	2,870	3,710	6,580	44
1945.....	11,865	62	11,927	99
1946.....	6,393	16	6,409	99
1947.....	3,745	1,358	5,103	73
1948.....	3,603	1,326	4,929	73
1949.....	2,328	1,592	3,920	59
1950.....	3,373	955	4,328	78
1951.....	2,353	303	2,656	88
1952.....	3,049	590	3,639	84
Average 1948-52	2,911	953	3,894	76

Source: *Livestock and Animal Products Statistics*. Ottawa, Dominion Bureau of Statistics. Annually.

production was 16·0 million pounds, the sharp decline in recent years being closely associated with the reduction in numbers of sheep on farms between the two periods.

Exports from Canada.—Canada exported 42 per cent of her annual production of wool in the five years 1948-52. In the pre-war period, 1935-39, almost half of the exports were shipped to the United States; since 1948, three-quarters of the total exports have been sent to that country.

Canadian wool is ordinarily exported on a greasy basis, about three-quarters of the total being described as "wool in the grease" for customs purposes. The value of wool exports averaged slightly more than two million dollars annually for the five-year period 1948-52. In these five years the value of exports to the United States totalled 7·8 million dollars and the total value of exports to all countries was 10·3 million dollars; that is, the United States received 76 per cent of the total dollar value of wool exported from Canada.

Imports Into Canada from the United States.—The wool that Canada exports is mainly of combing types. Since Canada produces only a small part of her wool requirements, she imports very large quantities annually, some of which is shipped from the United States although it may originally have come from other countries. Between 1948 and 1952 the total value of wool imported from the United States amounted to 10·8 million dollars. It should be noted that of this total, 5·8 million dollars or more than half, was imported in 1951. If 1951 is excluded, the values of Canadian exports to the United States, in the remaining four years totalled 5·9

Table 3.—Wool: Value of Exports from Canada to the United States and Imports from the United States into Canada, 1945-52

	Value of Exports to the U.S.A.			Value of Imports from the U.S.A.		
	Wool in the Grease	Other Wools	Total	Wool in the Grease	Other Wools	Total
	—\$000—			—\$000—		
1945.....	2,117	1,601	3,718	0	14	14
1946.....	1,024	843	1,867	0	1,184	1,184
1947.....	556	542	1,098	0	3,891	3,891
1948.....	853	594	1,447	147	635	782
1949.....	693	234	927	175	713	888
1950.....	1,383	557	1,940	251	1,557	1,808
1951.....	1,429	495	1,924	3,312	2,484	5,796
1952.....	1,060	539	1,599	742	791	1,533
Total 1948-52	5,418	2,419	7,837	4,627	6,180	10,807

Table 4.—Rates of Duty on Canadian Wools entering the United States and United States Wools Entering Canada at July 27, 1953 (U.S.A. Customs Classifications)

Item	Rate per Unit into U.S.A. from Canada	Rate per Unit into Canada from U.S.A.
	—cents per pound—	
Clothing wool in the grease.....	25½	10
Wool in the grease for carpets.....	13	free
Clothing wool 44's to 56's, greasy.....	25½	10
Combing wools 44's to 56's, greasy.....	25½	10
Combing wools over 56's.....	25½	10
Wool noils, not carbonized.....	12	10
Wool scoured or washed.....	27¾	10

million dollars and the total value of imports from the United States amounted to 5.0 million dollars.

Most of the wool entering Canada from the United States falls into the two customs classifications, "wool in the grease" and "wool washed or scoured". Since 1948 roughly equal quantities of these two classes have entered Canada from that country.

Tariff Situation.—"Wool in the grease" entered Canada from the United States free of duty, between March 1, 1952 and February 28, 1953. Since March 1, 1953 this class of wool has been subject to a duty of ten cents a pound. Wool that was scoured but not further processed was subject to the same arrangement as "wool in the grease" and is now also dutiable at ten cents a pound.

Rates of duty on Canadian wools entering the United States are much higher than the Canadian import rates. "Wool in the grease", the category that covers about three-quarters of the wool exported to the United States in the five years 1948-52, pays a duty of 25½ cents a pound entering that country. These greasy wools are mostly combing wools. In 1952 the United States imported greasy clothing wools valued at \$123 thousand and combing wools worth \$1,347 thousand. "Wool noils" from Canada face a United States tariff of twelve cents a pound. United States imports of non-carbonized noils in 1952 were valued at \$307 thousand.

United States as a Net Importer of Wool.—The U.S.A. produces only 20 to 25 per cent of the wool it consumes. The remainder is imported from a large number of countries, the principal suppliers being Argentina, Australia, New Zealand, Union of South Africa, Uruguay, India and Pakistan. Imports of Canadian wool into the United States are insignificant compared with quantities imported from these countries.

An important wool processing and manufacturing industry, which is dependent on continuing supplies of foreign wool for its existence, has been developed in the United States. This industry uses a very great variety of types and qualities of wool in its products and there is some degree of substitutibility between varying qualities of wool.

Table 5.—Wool: United States Production and Consumption^a, 1945-52

	Production	Consumption	Production as Per Cent of Consumption
	— million pounds, scoured basis —		
1945.....	189	645	29
1946.....	169	738	23
1947.....	153	698	22
1948.....	137	693	20
1949.....	121	500	24
1950.....	121	635	19
1951.....	120	484	24
1952.....	124	465 ^b	27

^a Adapted from *The Wool Situation*. Washington, United States Dept. of Agriculture, Bureau of Agricultural Economics.

^b Preliminary.

Canada's Interest in Developments.—As Secretary Benson stated, section 22 provides for the imposition of import quotas or import fees whenever imports of any agricultural commodity render or tend to render ineffective any price support or marketing program.

In view of the importance of the United States market to Canada, any action that the United States might take under the provisions of the Act, would be serious.

The effect of an import quota would be to limit immediately the market for Canadian wool. The imposition of an ad valorem import fee would have the same effect as an increased import duty.

Probable Effects of an Import Fee.—In the United States, an import fee on wool might result in:

- (a) Limiting consumption of wool because of its increased price;
- (b) Favouring substitution of U.S.-produced wool for imported supplies whenever possible;
- (c) Encouraging the substitution of synthetic fibres for wool; and
- (d) Reducing imports of wool because of (a), (b) and (c).

The United States accounted for about one-quarter of the world's consumption of wool between 1946 and 1952. Therefore any reduction in United States consumption would be the same, to the major world exporters, as a change in the demand for wool. World production of wool tends to be fairly constant and it is probable that the supply curve for world wool production is rather inelastic. On the other hand, it is also probable that recent improvements in synthetic fibres, whether used alone or in combination with wool, and the substitutibility of other natural fibres for wool, have made the United States demand curve for wool more elastic.

The effect of an increased import duty against wool is therefore likely to result in a substitution of other fibres for wool and hence, in a decrease in the world demand for wool.

MARKETING CHANNELS AND METHODS USED BY NEW BRUNSWICK EGG PRODUCERS

G. B. MURRAY

A third objective¹ of the economic study of the New Brunswick poultry industry undertaken in 1951 was to study the marketing practices of egg producers in that province. The findings relate to the practices of 84 randomly selected poultrymen of whom 75 were full-time farmers and nine were either small-scale or part-time farmers. All poultrymen interviewed had purchased at least 100 pullets or 200 mixed chicks in the spring of 1950 or 1951.

The marketing practices followed by the egg producers interviewed were more closely associated with size of flock than with any other factor. The size of flock maintained by producers in a given area has a definite influence on the type and the number of buyers through whom eggs are marketed. More egg-grading stations are located where large flocks are numerous, but where small flocks predominate, producers sell their eggs directly to consumers, retail stores and institutional buyers. During the period of flush production, marketing agencies in areas where small flocks predominate do not generally move eggs surplus to local needs into commercial egg marketing channels or into storage. As a result, prices received by producers during periods of surplus production are lower in these areas than in areas where large flocks and egg-grading stations are more plentiful.

Volume of Marketings Reported in Relation to Size of Flock.—Flocks were classified according to the average number of layers kept per month throughout the 12-month period from September 1, 1950 to August 31, 1951. In this classification (flocks from 0-49 layers, 50-99, 100-199, and 200 and over) the number of flocks was rather evenly distributed—about a quarter of the flocks falling into each class. When the reported marketings of each group were compared, however, marked differences were noticeable. Twenty-two per cent of the producers kept an average of 200 layers or more throughout the year and their sales represented about two-thirds of all the sales reported by the 84 producers interviewed. On the other hand, about

¹ The first two objectives are described in "Economic Factors Affecting Production and Distribution of Eggs in New Brunswick" in the October 1953 issue of *The Economic Annalist* on pages 108 to 113 inclusive.

Table 1.—Sales made by 84 New Brunswick Egg Producers in relation to Size of Laying Flocks, 1950-51

Size of flock ^a	Producers	Egg Sales
	— per cent —	
0—49.....	23	3
50—99.....	26	9
100—199.....	29	21
200 and over.....	22	67
Total.....	100	100

^a Average number of layers kept per month.

half of the producers (49 per cent) kept less than 100 layers per month throughout the year and their sales accounted for only about one-eighth of all the sales made by the 84 producers.

Number of Market Outlets Used by Producers.—Five different kinds of marketing agencies were used by New Brunswick egg producers during the period considered in this study. These agencies were egg-grading stations, retail stores, consumers, hatcheries and institutional buyers (restaurants, hotels, hospitals and logging camps).

There was some relationship between the number of market outlets used and the size of flocks. Producers with large flocks used more market outlets than producers with small flocks but no producers reported using more than three outlets. About four-fifths of the producers who kept less than one hundred laying hens and about two-fifths (42 per cent) of those with over two hundred laying hens used only one market outlet. Only producers who kept two hundred or more laying hens reported using three market outlets; this group comprised about one-fifth (21 per cent) of the flock owners who kept more than two hundred layers or only five per cent of all interviewed producers who reported egg sales.

Marketing practices were influenced by the type and number of market outlets readily available to producers, as well as by size of flock. For purposes of analysis the Province was divided into five market areas which were determined by the proximity of producers to wholesale buying facilities and large urban centres, or by both of these factors. The five areas are as follows:

Area I —Charlotte County

Area II —Saint John County

Area III—Central New Brunswick—the counties of Carleton, York, Sunbury, Kings and Queens

Area IV—Northern New Brunswick—the counties of Victoria, Madawaska, Restigouche, Gloucester, Northumberland and Kent

Area V —Eastern New Brunswick—the counties of Albert and Westmoreland.

At the time of the study all five types of market outlets were available to the producers. However, only one egg-grading station was located in Area IV, at Campbellton, and one in Area V, at Moncton. These two areas accounted for over half of the land area and contained 60 per cent or 304,474 of the 516,000 persons living in the Province. One-quarter, or 72,781 of these people, lived in towns and

Table 2.—Percentage of New Brunswick Egg Producers using Various Numbers of Market Outlets, 1950-51

Size of Flock	Number of Outlets Used							
	1		2		3		Total	
	Pro- ducers	Eggs Sold	Pro- ducers	Eggs Sold	Pro- ducers	Eggs Sold	Pro- ducers	Eggs Sold
	— per cent —							
0—49.....	79	84	21	16	— ^a	—	100	100
50—99.....	82	84	18	16	—	—	100	100
100—199.....	62	58	38	42	—	—	100	100
200 and over.....	42	50	37	31	21	19	100	100
All Producers.....	66	55	29	32	5	13	100	100

Table 3.—Number of Market Outlets used by New Brunswick Egg Producers, by Area, 1950-51

Area	Number of Outlets Used							
	1		2		3		Total	
	Pro-ducers	Eggs Sold	Pro-ducers	Eggs Sold	Pro-ducers	Eggs Sold	Pro-ducers	Eggs Sold
	— per cent —							
I.....	75	82	25	8	—	—	100	100
II.....	86	79	14	21	—	—	100	100
III.....	52	25	37	46	11	29	100	100
IV.....	83	87	17	13	—	—	100	100
V.....	50	11	50	89	—	—	100	100
New Brunswick.....	66	55	29	32	5	13	100	100

cities. Of the 12 grading stations located in the three remaining market areas, one was located in Area I, in the town of St. Stephen; six were in Area III, one in each of the following centres—Florenceville, Fredericton, Harvey Station, Norton, Sussex and Woodstock. The other five stations were in the city of Saint John. The population of market areas I, II, and III was about 707,712 of which 86,937 or 42 per cent lived in cities and towns.

Marketing practices differed in the five areas and can be attributed only in part to the kinds of outlets readily available to producers. In Areas IV and V, where services of egg-grading stations were not readily available, the majority of producers used only two outlets. However, in Area II where five marketing agencies were readily available to all producers, egg producers used only two outlets. This can be attributed to the fact that producers were able to by-pass wholesale egg buyers in Saint John and market their eggs direct to consumers and to retail merchants. Producers in Area III were the only ones who reported using three outlets; commercial producers used the facilities of wholesale egg buyers in their marketing practices.

Market Outlets Used by Producers in Various Areas.—The foregoing analysis cannot be used to describe the marketing practices of egg producers in any one marketing area of New Brunswick. Producers in Area I with flocks of more than 200 layers marketed their eggs exclusively through the egg-grading station and hatcheries but small producers used direct sales to consumers as their only market outlet. The principal market outlets in the area were confined to the towns of St. Stephen, St. Andrews and St. George, towns with a combined population of 6,468, or about a quarter of the population of the trading area.

Producers in Area II sold their eggs only through retail stores and direct to consumers. Saint John is the largest urban centre in New Brunswick (population of 50,023) and producers in the vicinity were able to market over half of their eggs (57 per cent) through retail outlets and 43 per cent direct to consumers. Grading stations in the Saint John area depended almost entirely on receipts from Prince Edward Island and Nova Scotia.

Table 4.—Kinds of Market Outlets used by 84 New Brunswick Egg Producers, 1950-51

Market Outlet	Producers ^a	Eggs Sold
	— per cent —	
Grading Stations.....	23	32
Retail Stores.....	46	32
Consumer.....	54	26
Institutional buyers.....	10	6
Hatcheries.....	6	4
Total.....	a	100

^a Totals more than 100 because one-third of the producers used more than one market outlet.

Table 5.—Market Outlets used by 84 New Brunswick Egg Producers in Relation to Size of Flock, 1950-51

Type of Outlet	Size of Flock									
	0-49		50-99		100-199		200 and over		All Flocks	
	Pro-ducers	Eggs Sold	Pro-ducers	Eggs Sold	Pro-ducers	Eggs Sold	Pro-ducers	Eggs Sold	Pro-ducers	Eggs Sold
	— per cent —									
Grading stations.....	16	9	18	7	25	20	32	40	23	32
Retail stores.....	42	34	36	39	33	19	79	36	46	32
Direct to consumers.....	63	57	45	32	50	38	58	21	54	26
Hatcheries.....	—	—	5	3	12	9	5	2	6	4
Institutions.....	—	—	14	19	17	14	5	1	10	6
Total.....	a	100	a	100	a	100	a	100	a	100

^a Totals more than 100 because one-third of the producers sold to more than one outlet.

In Area III grading stations and retail outlets were the two most important market outlets used by all producers; each outlet accounted for about one-third of the total marketing reported. Direct sales to consumers accounted for about one-fifth of all sales although this outlet was the one most widely used—53 per cent of the producers reporting direct sales to consumers.

Small flock owners marketed most of their eggs through retail stores and direct to consumers. However, 62 per cent of the flock owners who kept 200 or more layers reported selling eggs to a grading station; this outlet accounted for 41 per cent of the volume of the reported sales of this group. An equal number of these larger flock owners reported egg sales direct to consumers, but this outlet accounted for only 16 per cent of their total marketings.

In Areas IV and V sales to retail stores and direct sales to consumers accounted for the greater part of the reported egg marketings. As there was only one grading station in each of these areas grading stations were not generally available to producers there. Bathurst, Moncton and Campbellton afforded ready markets to the large producers in the vicinity of these urban centres and the egg producers were thus able to by-pass the grading stations. However, producers in districts at any distance from urban centres and these two grading stations marketed their eggs through small country stores, country buyers and institutions. Larger producers shipped eggs to Saint John or Fredericton during the flush production period, but only when local prices were extremely depressed.

Kinds of Market Outlets Used.—Slightly more than half of the producers interviewed sold eggs direct to consumers and slightly less than half sold them direct to retail stores. About one-quarter of the producers reported that they sold eggs to grading stations, one-tenth sold them to institutional buyers and only one-sixteenth to hatcheries.

More producers sold eggs direct to consumers than through other agencies. However, considering the volume of eggs marketed by producers included in the

Table 6.—Market Outlets Used, by Market Areas, New Brunswick, 1950-51

Type of Outlet	Area I		Area II		Area III		Area IV		Area V	
	Pro-ducers	Eggs Sold	Pro-ducers	Eggs Sold	Pro-ducers	Eggs Sold	Pro-ducers	Eggs Sold	Pro-ducers	Eggs Sold
	— per cent —									
Grading Stations.....	50	90	—	—	42	35	3	1	—	—
Retail Stores.....	—	—	43	57	42	33	52	43	83	49
Direct to Consumers.....	50	8	57	43	53	18	48	44	67	51
Hatcheries.....	25	2	—	—	11	7	—	—	—	—
Institutions.....	—	—	—	—	11	7	3	12	—	—
Total.....	a	100	a	100	a	100	a	100	a	100

^a Totals add to more than 100 because some producers sold to more than one outlet.

sample, this outlet was less important than either egg-grading stations or retail stores. Direct sales to consumers accounted for 26 per cent of the reported marketings as compared with 32 per cent through grading stations and 32 per cent through retail stores.

About one-third of the eggs marketed were sold to egg-grading stations. This situation cannot be considered representative of the marketing practices of all producers in the province but only of those producers who had housed at least 100 laying hens in the fall. The volume of ungraded eggs marketed through the grading stations other than those in Saint John, which depend on imports from Nova Scotia and Prince Edward Island for supplies, was only about one-tenth of the total marketings of New Brunswick producers. The producers included in the study had flocks larger than the provincial average.

There was a marked relationship between the size of flock and the type of market outlet used by producers. As previously noted, there were more producers reporting direct sales to consumers than producers using any other market outlet. However, producers with large flocks sold a smaller proportion of their eggs direct to consumers than producers with small flocks. Producers who kept over 200 layers throughout the year reported marketing only one-fifth of their eggs direct to consumers whereas producers with small flocks marketed about half of their eggs this way.

There was a more marked relationship between the size of flock, the volume of egg marketings and the number of producers marketing eggs through grading

**Table 7.—Eggs Marketed on a Graded and Ungraded Basis by Areas,
84 Producers, New Brunswick, 1950-51**

Market Area	Grading Stations	Other Market Outlets		
		Producer- Graded	Ungraded	Total
		— per cent —		
I.....	92	—	8	100
II.....	—	100	—	100
III.....	38	34	28	100
IV.....	1	42	57	100
V.....	—	48	52	100
New Brunswick.....	33	38	29	100

stations. Only 16 per cent of the producers with less than 50 layers marketed eggs through grading stations, and they made only nine per cent of their sales to these stations. As the size of flock increased there was a marked increase in the number of producers who reported using grading stations as an outlet. Of the producers with 200 or more layers, 32 per cent reported marketing eggs through grading stations which handled 40 per cent of the sales of this group.

Quality.—The purchase and sale of eggs on a graded basis is mandatory in New Brunswick. The New Brunswick Government, on July 24, 1940, by Order in Council under the Natural Products Act of New Brunswick, declared the Federal marketing regulations respecting the purchase and sale of eggs to be effective in New Brunswick.

According to information secured during the study in areas where egg grading stations were readily available to producers, a smaller proportion of the eggs was sold on an ungraded or nest-run basis than in areas where egg marketing channels were not so well organized. In Area IV, 57 per cent of the sales were made on a nest-run or sized basis only; Area V followed with 52 per cent. Egg-grading stations were not generally used because they were not readily available to producers in either of these areas. Grading stations were more plentiful and flocks larger in Area III where only 28 per cent of the eggs sold were ungraded. In Area I, only producers with small flocks sold ungraded eggs; these eggs represented eight per cent of all sales. All producers interviewed in Area II, stated that they candled the eggs which they sold on the market.

The data presented in Table 7 indicate that almost one-third (29 per cent) of the eggs sold were ungraded. Two-thirds of the producers interviewed reported that

they did sell some eggs on an ungraded basis but only one-third of the producers reported that they sold all of their eggs as nest-run. This latter proportion kept small flocks and did not consider the production of eggs for market as a significant source of farm income. In Area III producers with less than 50 laying hens reported selling 80 per cent of their market eggs on a nest-run basis; in Area IV producers with less than 100 laying hens marketed all of their eggs as sized only or as nest-run. Conversely, producers with large flocks sold more eggs on a graded basis than as nest-run. In Area III only 18 per cent of the eggs sold by producers with 200 or more laying hens were ungraded, whereas in Area IV, where marketing facilities were not as well organized, 40 per cent of the eggs sold by the larger flock owners were sold on a nest-run basis.

The size of flock maintained in a given area in New Brunswick definitely influences the marketing practices of egg producers. The facilities provided by egg-grading stations are more plentiful and fewer eggs are sold on an ungraded or nest-run basis by producers in areas where large flocks predominate. It is not likely that producers in areas where small flocks predominate will alter the marketing channels they now use or exercise more control over the quality of their product until there is a substantial increase in the size of their flocks.

FARM MECHANIZATION AND LABOUR IN THE SOUTH-CENTRAL RED RIVER VALLEY OF MANITOBA

J. G. MCKENZIE

Mechanization influences the level of farm production and the efficiency of farm labor probably more than any other single technological development. Machinery has completely displaced the horse as a source of farm power in many grain growing areas. Today, the general use of tractors and modern tillage and harvesting machines has greatly reduced the time required in field operations and has increased the production of crops for sale. The degree of farm mechanization in Manitoba varies from area to area, depending primarily on productive resources, environment and economic conditions. In the south-central part of the Red River Valley the farms are highly mechanized. This was clearly indicated in a study of crop labour requirements conducted in the summer of 1952 by the Economics Division.

The study area included the municipalities of Morris and Rhineland. This area lies in the bed of glacial Lake Agassiz which makes its topography remarkably level. The soil is fertile, with textures ranging from medium loam to heavy clay. A limited natural water supply hinders livestock production, and high arability of land favors mechanized crop production. The soil and climate are favourable for the production of all common grain crops as well as such special crops as sugar beets, sunflower, corn and peas.

Patterns of land utilization for farms of different sizes are illustrated in Table 1. The 155 farms included in the study averaged 342 assessed acres per farm and 94 per cent of this acreage was cultivated—75 per cent in grain crops; three per cent in special crops; five per cent in legumes, grasses or improved pasture; and 17 per cent in summerfallow. The acreage in grain was about the same for all sizes

**Table 1.—Utilization of Cropland by Size of Farm, 155 Farms,
Morris and Rhineland Municipalities, 1952**

	Acres in Cropland per Farm					All farms
	0-120	121-240	241-400	401-560	561+	
Number of Farms.....	25	46	39	22	23	155
Total cultivated acres.....	87	179	292	469	766	321
Total assessed acres.....	100	193	321	484	803	342
— per cent —						
Common grain crops.....	77	75	73	75	75	75
Special crops.....	9	6	4	3	1	3
Legumes, grasses and improved pasture.	3	4	4	3	6	5
Summerfallow.....	11	15	19	19	18	17
Total.....	100	100	100	100	100	100

of farms but special crops were generally more important on the smaller units and the percentage of the total cultivated acres in summerfallow was usually greater on the larger units. Of all the farms in the study, 37 had an average of 18 acres in sugar beets; 22 an average of 17 acres in corn; 14 an average of 24 acres in peas; ten an average of 28 acres in sunflowers; and three an average of 12 acres in soybeans.

The high percentage of cultivated land and wide variety of crops necessitated a high machinery investment and a wide range in types of machines. The number of common implements per farm and per 100 acres of cropland is indicated in Table 2. Only one farm reported having a four-horse team. Most of the farms may be considered highly mechanized but few operators owned all the machines they used. All but one of the farms with less than 121 cultivated acres required the use of hired or borrowed machines; and although the larger units had more complete lines of equipment, 65 per cent of the farms with 561 or more cultivated acres hired or borrowed some machinery. The most common machines hired or borrowed were weed sprayers, and seeding and harvesting equipment for special crops.

Table 2.—Number of Machines per Ten Farms and per 100 Acres of Cropland, 155 Farms, Morris and Rhineland Municipalities, 1952

Type of machine	Average Age of Machine	Total Machines	Machines per Ten Farms	Machines per 100 Acres of Cropland
	years	— number —		
Special equipment—				
Tractor, 3-4 plow.....	9	252	16.2	0.50
Combine, 12-foot.....	7	120	7.7	0.24
Swather, 12-foot.....	8	103	6.6	0.20
Truck, one-ton.....	7	118	7.6	0.24
Car.....	8	119	7.6	0.24
General equipment—				
Plow, 3-bottom.....	11	172	11.1	0.34
Oneway, 6-foot.....	8	60	3.9	0.12
Disk, 12-foot.....	2	50	3.2	0.10
Cultivator, 10-foot.....	10	163	10.5	0.33
Disc harrow—double, 10-foot.....	14	21	1.4	0.04
Disc harrow—single, 21-foot.....	10	29	1.9	0.06
Drag harrow, 30-foot.....	15	173	11.2	0.35
Packer, 12-foot.....	28	21	1.4	0.04
Weed sprayer, 30-foot.....	4	49	3.2	0.10
Drill, 10-14 foot.....	12	146	9.4	0.29
Binder, 7-foot.....	20	51	3.3	0.10
Mower, 5-foot.....	21	91	5.9	0.18
Rake, 10-foot.....	23	83	5.4	0.17

Special Equipment.—There were more tractors per farm and per acre than any other kind of machine. Of all the farms included in the survey, one had no tractor, 75 had one tractor; 63 had two; 15 had three; and one had four. Several of the farms with more than one tractor kept a small one for yard work or odd chores, to do some of the work done by a team of horses. The two-plow tractor was most common on farms with less than 241 cultivated acres and the three-four-plow tractor was the most common on the larger units. The average age for all tractors was nine years, the smaller farms having older models than the larger ones.

Although almost all of the grain was combined there were only 7.7 combines per ten farms. All farms having over 400 cropland acres had a combine but many of the smaller units had their grain crops custom harvested. On the average, there were 6.6 swathers per ten farms, and more of these machines on the large than on the small units. Five of the farms reported having threshing machines but only two of these used threshers during the survey year. About thirty per cent of the farms had a binder which was used to cut some feed grain for livestock use.

Special machines, such as balers, bale loaders, forage harvesters, beet harvesters, and corn pickers, were all reported in this area but were found on few farms. These machines, being costly in relation to the acreage of land per farm requiring their use, were mostly hired rather than owned.

Five farms had balers and one a bale loader. About half of the operators baled feed or bedding for livestock which indicates the extent to which the remaining

farmers had to rely on custom work. One farm had a forage harvester which was purchased during the year of the study and handled twenty acres of corn. Beet lifters were found on twelve farms, eight of which had less than 241 cultivated acres. One corn picker and three beet harvesters were reported. In most cases, beets were topped by hand following the operation of the beet lifter.

General Equipment.—One of the most common machines of the general equipment class was the plow; on the average there were 11.1 per ten farms, in the area. The size of plow was in most cases directly related to size of tractor on the various farms—the two-furrow plow being most common on the smaller units and the three-furrow plow on the larger units. During recent years the importance of plowing in the field operations had declined because of greater use of surface tillage machines, especially diskers. On many farms the plow was relatively old and used only to a limited extent.

Diskers, which resemble oneways in construction and tillage performance, are best adapted to large fields and so were commonly found only on the larger farms. Many of these machines had seeder attachments and were also used for seeding operations. As diskers are a recent development, they were all fairly new.

Oneways, cultivators, drag harrows and grain drills were found in all farm size-groups but more of them belonged to the larger units. Weed sprayers averaged 3.2 machines per ten farms with a greater concentration on the larger units. About two-thirds of all farms sprayed for weed control during the year of the study, which indicates that extensive custom work was done by this type of machine, especially on the smaller units.

**Table 3.—Capital Invested in Machinery according to Size of Farm,
155 Farms, Morris and Rhineland Municipalities, 1952**

	Cropland Acres					All farms
	0-120	121-240	241-400	401-560	561+	
Number of farms.....	25	46	39	22	23	155
	— dollars —					
Kind of machine:						
Special equipment.....	1,846	3,688	4,862	6,982	9,037	4,948
General equipment.....	633	965	1,535	2,161	2,252	1,415
All equipment.....	2,479	4,653	6,397	9,143	11,289	6,363
Investment per cropland acre.....	28.49	25.99	21.91	19.49	14.74	19.82

Seven beet seeders and 15 corn seeders were reported. The rest of the 37 farms growing sugar beets and the 22 farms raising corn had to borrow or custom hire these seeders. Beet seeders averaged seven years of age and corn seeders, 12. Farms in this area also had a limited number of other machines. Four of the larger farms reported rod weeders. Mechanical grain loaders, either in the form of a truck auger or a portable grain auger, were kept on 55 per cent of all farms. Although this area is fully electrified and many farms have well equipped machine repair shops, there was only one electric motor per ten farms. These motors ranged in size from one-quarter horse- to four horse-power. One farm had a subsoiler purchased in 1952 and used to till ten acres.

Machinery Investment.—The high degree of mechanization in this area is reflected in a fairly high capital investment in machinery (Table 3). For all farms, the investment in machinery ranged from \$2,479 for units having less than 121 cropland acres to \$11,289 for units with 561 or more cropland acres and averaged \$6,363 per farm. As the farms increased in size the machinery investment per cropland acre decreased; for all farms this investment averaged \$19.82 per acre, decreasing from \$28.49 per acre for the smallest farm size-group to \$14.74 per acre for the largest farm size-group.

**Table 4.—Man Equivalents according to Type of Worker and Size of Farm,
155 Farms, Morris and Rhineland Municipalities, 1952**

	Cropland Acres					All farms
	0-120	121-240	241-400	401-560	561+	
Number of farms.....	24	42	35	20	22	143
Type of worker:	— average man equivalents per farm—					
Operator.....	0.94	0.94	0.93	0.92	0.90	0.93
Full-time family.....	0.11	0.28	0.46	0.64	1.02	0.46
Other family.....	0.20	0.24	0.25	0.20	0.34	0.25
Hired.....	0.04	0.05	0.18	0.25	0.35	0.15
Total.....	1.29	1.51	1.82	2.01	2.61	1.79

Investment in special machines made up a larger percentage of the machinery investment on the larger farms. It was only these farms that had self-propelled combines or both a car and a truck. The investment in tractors for the smallest farm size-group was the largest single item and averaged \$945 per farm, or about one-half the total value of special equipment. Trucks and then cars represented the next largest capital expenditures. There was only a small investment in combines and swathers on these small farms. For the largest farm size-group, combine investment averaged \$2,826 per farm, the largest capital item; tractors were next, then cars and trucks, which were about equal in value. Larger farms also had a greater investment in other special equipment, which included forage harvesters, balers and harvesting equipment for special crops.

Labor Supply.—The average composition of the labor force in the Morris and Rhineland municipalities is shown in Table 4. In this table one "man equivalent" is that of one adult male worker capable of working at full capacity, and on the farm for the entire year. All workers were given a rating based on their individual labor efficiency and time of operation relative to one "man equivalent".

In most cases the operators lived on the farm the entire year. Full-time family labor generally represented that of the operator and his sons or brothers and constituted the permanent labor force on the farm as distinguished from the incidental help supplied by wives, daughters and school children.

The operator supplied 52 per cent of the entire labor force on all farms; this amount decreased from 73 per cent of the total supply on the group of farms having less than 121 cropland acres to 34 per cent on the group of farms having 561 or more cropland acres. Labor contributed by the full time family ranged from nine per cent of the total required on the farms having less than 121 cropland acres to 39 per cent of the total on farms having 561 or more cropland acres. "Other family labor" made up a greater percentage of the labor force on the smaller farms. Some hired labor was needed by all farm size-groups. Smaller farms usually hired this

**Table 5.—Effect of Substitution of Machinery for Labor on Labor Efficiency,
103 Farms, Morris and Rhineland Municipalities, 1952**

Capital invested in Machinery per Man Equivalent	Machinery Investment per Cropland Acre	Man Equivalents	Cropland Acres per Man Equivalent	Grain produced per Man Equivalent	Man-Hours per Cropland Acre*
	dollars		acres	bushels	hours
1,000-2,000.....	14.47	2.12	106	1,945	4.45
2,001-3,000.....	18.39	1.65	138	2,621	4.04
3,001-4,000.....	18.29	1.80	194	2,891	2.90
4,001-5,000.....	19.39	1.87	227	4,075	3.08
5,001 and over.....	20.85	1.66	307	5,064	2.94

* Cropland acres represent the total improved land. Man-hours per acre for any individual crop would therefore be higher.

type of labor by the day to weed and harvest sugar beets or to combine grain. Several of the larger farms hired labor by the month and four farms reported having hired labor during the entire year.

Labor Efficiency.—Labor is an important factor in production. Any innovation that displaces labor may be regarded as contributing to labor efficiency, and within limits, machinery is highly substitutable for labor in crop production. Considering both labor and machinery as costs of production, then with any given amount of capital input there will be a definite combination of labor and machinery inputs associated with a minimum cost per unit of output. The varying amounts of labor and machinery in the combination will depend on the scarcity and cost of each factor. This article does not deal with costs of operation and farm receipts but uses physical productivity as a criterion for labor efficiency. Measures of efficiency used in this analysis are: cropland acres handled per man equivalent, bushels of grain produced per man equivalent and man-hours required per cropland acre. The influence that an increase in substitution of machinery for labor had on labor efficiency in the survey area is shown in Table 5.

When the farms were grouped according to capital investment in machinery per man equivalent it was found that with each increase in the substitution of machinery for labor there was an increase in labor productivity. The group of farms having less than \$2,001 invested in machinery per man equivalent had a relatively low machinery investment per cropland acre and a large labor force. This group included many of the small farms that had either smaller and older models of machines or had an incomplete machinery complement, relying heavily on the use of hired custom equipment. Farms having between \$3,001 and \$4,000 invested in machinery per man equivalent were the most efficient in man-hour requirements per cropland acre. These farms were large enough to utilize fully 3-4 plow tractors, 12-foot self-propelled combines and larger auxiliary equipment. On farms having more than \$4,000 invested in machinery per man equivalent there was usually an increase in number rather than in size of machine. Therefore, on these farms there would be an increase in the number of acres that could be worked by the machinery complement but little or no gain in the hour-requirement rate per acre.

Reduction of hand labor by mechanization will make farm operations more attractive to the individual grower and, by increasing production, will improve the competitive position of farming among other industries. An analysis of data obtained through the study indicates that the labor force is not being fully utilized on many of the smaller farms. This situation could be improved either by reducing the labor supply or by increasing the size of farm, and the capital invested in machinery. However, on many of the small farms the family labor unit is at a minimum. Also, a serious obstacle to increasing the size of farm to the extent that a full line of machinery could be advantageously employed, is the fact that there is little saleable land in the area. A partial answer to the problem on some farms might be an increased acreage in special crops and a wider use of custom hired machines.

FAO CONFERENCE—ROME—NOVEMBER 1953

The Seventh Session of the Conference of the Food and Agriculture Organization of the United Nations was held in Rome from November 23, 1953. The sixty-seven member nations of FAO reviewed the activities of the organization during the period since the last Conference in November, 1951 and considered the Programme of Work and Budget for 1954 and 1955 as well as administrative matters affecting the Organization. Special consideration was given to a review of the World Situation and Outlook in respect to Food and Agriculture, particularly the progress made by member countries in increasing food production. The Conference had before it a report of a Group of Experts on an Emergency Famine Reserve and considered the progress made in the reform of agrarian structure in member countries as well as other undertakings resulting from the 1951 session of the Conference.

PUBLICATIONS OF THE ECONOMICS DIVISION

The Exchange of Farming Information. Abell, Helen C. Ottawa. August 1953. pp. ii + 29 + maps.

The fourth in a series of brief reports dealing with the factors influencing the choice of alternative farm enterprises in two mixed farming areas of Alberta. It analyzes the processes by which farming information is exchanged; it is primarily concerned with the farmers themselves, their use of the many different ways of securing information and their awareness of the role they play in receiving and giving information. The report also describes some of the "characteristics of persons using various ways of getting farm information".

UNITED NATIONS PUBLICATIONS

Economic Bulletin for Europe, First Quarter, 1953. Vol. 5, No. 2. Geneva, July 1953. pp. 112.

In addition to the *Review of the Economic Situation in Europe during the First Quarter of 1953* this Bulletin contains *Special Articles on Developments in Trade between Eastern and Western Europe from 1951 to 1952*, and on *National Budgets in Western Europe—Post-war Experiments in National Income Forecasting in the United Kingdom, the Netherlands and Scandinavia*, and a section on *European Economic Statistics*.

OTHER PUBLICATIONS

Economics of Transportation. Westmeyer, Russell E. New York, Prentice-Hall, Inc. 1952. pp. viii + 741.

A welcome addition to the literature on the economics of transportation. The author stresses the significance of the rapid development of motor, domestic water, and air transportation. He has divided his book into seven main parts. Part I emphasizes the importance to the economy of an efficient and economical transportation system and traces the early history of domestic transportation in the United States. Part II covers railroad transportation, an agency which is given more space in the book than any other single agency of transportation, because of the longer history of the railroads and also because they are presently hauling more traffic than all the other agencies combined.

Parts III, IV, V and VI deal with highway, domestic water, air, and other transportation agencies. Part VII includes a description of some basic transportation problems in the national economy and ends with proposed solutions to transportation problems.

City Milk Distribution. Bressler, R. G., Jr. Harvard Economic Studies, Vol. XCI. Harvard University Press, Cambridge, Mass. 1953. pp. xii + 398.

In this Wells Prize essay R. G. Bressler makes a detailed analysis of the factors contributing to efficiency in city milk distribution. He first describes some of the recent trends in the general field of distribution and then in the more specific or limited field of milk distribution.

The author does not content himself with a mere description of market mechanisms. He sets down the criteria for efficient distribution; makes a detailed investigation of processing and distribution costs under several existing methods of distribution, including alternate-day deliveries; works out specific criteria for market reorganization, such as exclusive delivery territories and municipal milk distribution; and estimates the effects of reorganization on physical input requirements and on costs. He concludes with a section on consumer demand and preferences.

This study is a practical application of the case-budget technique to an analysis of the present structure of costs in milk processing and delivery, and of the prospective structure of costs under hypothetical reorganized market situations.

City Milk Distribution will be of interest to all individuals and organizations concerned with marketing efficiency and the various aspects of pricing in fluid milk markets. It may be used as a case study and model by research workers, students and teachers interested in new approaches to the problem of economic efficiency in marketing.

Principles of Farm Management. *Efferson, J. Norman.* New York, Toronto and London, McGraw-Hill Book Company, Inc. 1953. pp. viii + 431.

The author's main objective is to present the basic principles of farm management in a simplified form. His book was written primarily to serve as a first course text for students of agriculture but, as most other textbooks on farm management, it may serve as a useful guide to farmers in developing their farm management programs.

Savings in the Modern Economy. A symposium edited by *Walter W. Heller, Francis M. Boddy* and *Carl L. Nelson*, University of Minnesota. Minneapolis, the University of Minnesota Press. 1953. pp. xix + 370.

The editors of this book are professors in the School of Business Administration of the University of Minnesota. The contents of the book are based on 28 papers given at a Savings Conference held at the University of Minnesota in May 1952. These papers were presented by professors of economics, government officials and industrialists and thus bring to the reader the considered opinions of theoreticians and practitioners on one of the fundamental problems in the modern economy.

All papers reflect the desire to present fresh and practical viewpoints and to help in the clarification of a difficult problem. The editors have succeeded in arranging a wide variety of materials in such a logical manner that the interest of the reader may be maintained throughout.

The Savings Problem: a Survey serves as an introductory chapter to the four main parts of the volume: *Savings and Economic Policy*; *Savings Concepts, Data and Behaviour*; *The Savings Problem in Underdeveloped Economics*; and *Savings and Inflation*. Canadian readers are likely to be especially interested in Chapter 2, *Savings, Investment, and Inflation: A Canadian View*, contributed by Douglas Abbott, the Canadian Minister of Finance, as well as in Chapter 3, *Savings and the World Economy*, a product of the pen of Hugh Gaitskell, a well-known British economist and a former Chancellor of the British Exchequer, and in Chapter 4, *Savings in the Expanding United States Economy*, prepared by Alvin H. Hansen, professor of political economy at Harvard University.

International Trade Statistics. Edited by *R. G. D. Allen* and *J. Edward Ely*. New York, John Wiley and Sons, Inc., and London, Chapman and Hall, Limited. 1953. pp. xii + 448.

A book that will "provide the general user of international trade statistics with practical guidance and an adequate comprehension of their general scope and limitations". It is the result of a co-operative effort based on the experience of experts in various countries and international organizations.

Part I deals with the *Basic Characteristics of the Statistics*—compilation, coverage, commodity classification, valuation, exchange conversion, country classification, and publication and use of national statistics. L. A. Kane of the External Branch of the Dominion Bureau of Statistics and Irving Weiss of the United States Bureau of the Census, have jointly contributed the chapter on *Compilation*. Part II describes some *Important Derived Uses of the Statistics*. The discussion is carried under the following chapter headings: *Merchandise Trade in the Balance of Payments*, *Index Numbers of Volume and Price*, *Exports and Imports in the Domestic Setting*, and *International Comparisons and Standardization*. The chapter on *Exports and Imports in the Domestic Setting* was prepared by D. H. Jones of the Research and Development Division of the Dominion Bureau of Statistics.

Part III deals with *Statistics of Individual Countries* in chapters titled: *United States*, *United Kingdom*, *The British Commonwealth*, *British Colonies and Dependencies*, *Continental Europe and Dependencies*, *Latin America*, and *Near and Far East*. *The British Commonwealth* is a chapter contributed by Herbert Marshall, Dominion Statistician, and C. D. Blyth and L. A. Shackleton of the International Trade Statistics Division of the Dominion Bureau of Statistics.

THE ECONOMIC ANNALIST

A BIMONTHLY REVIEW OF AGRICULTURAL BUSINESS
MARKETING SERVICE, ECONOMICS DIVISION,
DEPARTMENT OF AGRICULTURE, OTTAWA

Published by Authority of the Right Hon. James G. Gardiner, Minister of Agriculture

INDEX, Volume XXIII, 1953

	PAGE
Agriculture, Government Measures Affecting	<i>Viviane H. Matte</i> 18
Air Photograph Study	<i>D. J. Packman</i> and <i>L. E. Philpotts</i> 126
Alberta, Income and Farm Progress on Woodland and Parkland Soils in Northern	<i>H. L. Sharpe</i> 91
Beef and Pork, The Influence of Prices on the Relative Consumption of	<i>T. G. E. Woollam</i> 29
Cattle—a Comparison of Recent Price Relationships in Canada and the United States, Feeder	<i>M. Rachlis</i> 15
Cattle Production in Western Saskatchewan and Eastern Alberta	<i>S. B. Burkell</i> 65
Choice of Alternative Farm Enterprises	<i>Helen A. Abell</i> 33
Crop Rotations and Tillage Practices in West Central Manitoba	<i>W. G. Smith</i> 86
Decline of Sheep Production in the Maritime Provinces	<i>G. C. Retson</i> 128
Development of Research on Food Consumption by the Economics Division	<i>L. E. Drayton</i> 40
Economic Factors Affecting Production and Distribution of Eggs in New Brunswick	<i>G. B. Murray</i> 108
Economic Situation, The—February	3
—April	27
—June	51
—August	75
—October	99
—December	123
Egg Producers, Marketing Channels and Methods Used by New Brunswick	<i>G. B. Murray</i> 133
Eggs, Marketing Price Spreads, A Large Fresh	<i>T. G. E. Woollam</i> 105
FAO in 1952	<i>S. C. Hudson</i> 46
Farm Enterprises, Choice of Alternative	<i>Helen A. Abell</i> 33
Farm Forestry in Ontario	<i>D. J. Packman</i> 5
Farm Mechanization and Labour in the South Central Red River Valley of Manitoba	<i>J. G. MacKenzie</i> 138
Farm Progress of World War II Veterans	<i>R. A. Benedict</i> 113
Farm Ownership in Quebec—Part II	<i>A. Gosselin</i> 11
—Part III	<i>A. Gosselin</i> 61
Federal Agricultural Programs Affecting Prices of Farm Products, March 1, 1952 to February 28, 1953	<i>Marjorie R. Cameron</i> 35
Feeder Cattle—a Comparison of Recent Price Relationships in Canada and the United States	<i>M. Rachlis</i> 15
Food Consumption by the Economics Division, Development of Research on	<i>L. E. Drayton</i> 40
Freight Rate and Transportation Developments, Recent	<i>E. P. Reid</i> 43
Government Measures Affecting Agriculture	<i>Viviane H. Matte</i> 18
Governmental Quality Control Measures for Milk and Cream Used for Manufacturing Purposes	<i>D. K. Fairbarns</i> 79

	PAGE
Hides and Skins in Canada, The Marketing of	J. K. Mann 83
Holland Township, Grey County, Ontario, Land Use in.....	D. J. Packman 101
Income and Farm Progress on Woodland and Parkland Soils in Northern Alberta	H. L. Sharpe 91
Income, Price Indexes and Farm	F. M. Schrader 57
Influence of Prices on the Relative Consumption of Beef and Pork, The	T. G. E. Woollam 29
Land Classification in Northern Saskatchewan, Some Aspects of.....	R. A. Stutt 59
Land Use in Holland Township, Grey County, Ontario.....	D. J. Packman 101
Manitoba, Crop Rotations and Tillage Practices in West Central.....	W. G. Smith 86
Manitoba, Farm Mechanization and Labour in the South-Central Red River Valley of	J. G. MacKenzie 138
Market for Farm Products in Newfoundland, 1948-50, The.....	W. C. Shipley 53
Marketing Channels and Methods Used by New Brunswick Egg Producers	G. B. Murray 133
Marketing of Hides and Skins in Canada	J. K. Mann 83
Marketing Price Spreads, A Large Fresh Eggs	T. G. E. Woollam 105
Milk and Cream Used for Manufacturing Purposes, Governmental Quality Control Measures for	D. K. Fairbairns 79
New Brunswick, Economic Factors Affecting Production and Distribution of Eggs in	G. B. Murray 108
Newfoundland, 1948-1950, The Market for Farm Products in.....	W. C. Shipley 53
Ontario, Farm Forestry in	D. J. Packman 5
Photograph Study, Air	D. J. Packman and L. E. Philpotts 126
Price Indexes and Farm Income	F. M. Schrader 57
Prices of Farm Products, March 1, 1952 to February 28, 1953, Federal Agricultural Programs Affecting	Marjorie R. Cameron 35
Publications of the Economics Division:	
February—Consumption of Food by Farm Households in New Brunswick, 1945-46 by Charlotte I. Johnston and L. E. Drayton	24
—Demand for Cheese in Selected Canadian Cities by L. E. Drayton	24
—Farm Power and Machinery Costs in Alberta, 1950 by H. K. Scott	24
—A Methodological Note and Alberta Farm Operators and the Level-of-Living Concept, 1952 by Helen C. Abell and B. A. MacDonald	24
—Provincial Agricultural Legislation in Ontario and Quebec, 1951	24
April—Credit Unions in Canada, 1951 by J. E. O'Meara.....	48
—A Farm Business Study in the Fox Valley-Eston-Kindersley Area of Saskatchewan by T. O. Riecken and M. E. Andal..	48
—Farm Organization in the Northern Okanagan Valley, British Columbia by H. W. Trevor and D. W. Ware	48
—Organization and Returns of Stone Fruit and Pear Enterprises in the Okanagan Valley, British Columbia, 1949-50 by D. W. Ware	48
June—Canadian Agriculture in 1952, a Chronology of Federal Policies by Margaret I. Dunbabin	69
—Consumption of Food by Farm Households in Nova Scotia, 1945-46 by Charlotte I. Johnston and L. E. Drayton.....	69

	PAGE
—Consumption of Food by Farm Households in Prince Edward Island, 1945 by Charlotte I. Johnston and L. E. Drayton..	69
—Factors Affecting Hog Production by F. M. Schrader.....	70
—Factors Affecting the Weight of Market Hogs by F. M. Schrader	70
—Farm Business in the Gilbert Plains and Sifton Areas of Manitoba by J. G. Mackenzie	69
—Farming in the Armstrong District of Manitoba, 1948 by T. O. Riecken	70
—The Market for Farm Products in the West Kootenay Area of British Columbia by W. C. Shipley and I. F. Furniss....	69
—Marketing Ontario Grain Corn by M. Rachlis.....	70
—Marshland Utilization in Nova Scotia and New Brunswick by G. Haase and D. J. Packman.....	69
—Proposed Changes in Farming Enterprises by Helen C. Abell	70
—Rural Young People and Their Future Plans by Frank Uhler and Helen Abell	69
August—Back to the Land, Alberta, 1932-48 by T. S. Rackham....	95
—The Strawberry Enterprise in Nova Scotia by G. C. Retson and V. A. Heighton	95
October—The Influence of Prices on the Relative Consumption of Beef and Pork by G. E. Woollam	118
—A List of Published Material by Members of the Economics Division, 1930-1953	118
—Provincial Agricultural Legislation in Ontario and Quebec, 1953, Supplement and Consolidated Index by Viviane H. Matte	118
—Seasonal Variation in Prices and Production of Livestock and Livestock Products by F. M. Schrader and G. E. Woollam	118
December—The Exchange of Farming Information by Helen C. Abell	143
Publications, Other:	
February—The Canadian Grain Trade, 1931-1951 by D. A. MacGibbon	24
—Planning for Freedom and other essays and addresses by Ludwig von Mises	24
June—Demand Analysis, A Study in Econometrics by Herman Wold	72
—The Development of Economic Thought, Great Economists in Perspective, edited by Henry William Spiegel.....	71
—An Introduction to Linear Programming by A. Charnes, W. W. Cooper and A. Henderson.....	72
—Next Year Country: A Study of Rural Social Organization in Alberta by Jean Burnet.....	71
—Proceedings of the International Conference on Agricultural and Co-operative Credit, August 4 to October 2, 1952: Volume I—Papers, Discussion and Group Summaries; Volume II—National Reports, Inspection Trips	72
—The Story of Agricultural Economics in the United States, 1840-1932 by Henry C. and Anne Dewees Taylor.....	72
August—Agricultural Marketing by F. L. Thomson.....	96
—Farm Management Analysis by Lawrence A. Bradford and Glenn L. Johnson	96
—Sampling Techniques by William G. Cochrane.....	96
—Studies in Econometric Method (Cowles Commission Research Staff Members), edited by Wm. C. Hood and Tjalling C. Koopmans	96
October—Economics of Agricultural Production and Resource Use by Earl O. Heady	120

	— <i>Farm Policies of the United States, 1790-1950: A Study of their Origins and Development</i> by Murray R. Benedict...	119
	— <i>River on the Rampage</i> by Kenneth S. Davis.....	120
December	— <i>City Milk Distribution</i> by R. G. Bressler, Jr.	143
	— <i>Economics of Transportation</i> by Russell E. Westmeyer....	143
	— <i>International Trade Statistics</i> , edited by R. G. D. Allen and J. Edward Ely	144
	— <i>Principles of Farm Management</i> by J. Norman Efferson....	144
	— <i>Savings in the Modern Economy</i> , a Symposium edited by Walter W. Heller, Francis M. Boddy and Carl L. Nelson	144
Publications, United Nations:		
June	— <i>Agricultural Credit for Small Farmers</i> (FAO Report)....	71
	— <i>The Economic Relations between Growers of Sugar Beet and Factories in Certain Selected Countries</i> (FAO Report)	71
	— <i>Proceedings of the United Nations Scientific Conference on the Conservation and Utilization of Resources: Volume IV—Water Resources; Volume V—Forest Resources; Volume VI—Land Resources</i>	70
	— <i>A Reconsideration of the Economics of the International Wheat Agreement</i> (FAO Report)	71
	— <i>Statistical Yearbook, 1952</i>	71
August	— <i>Co-operative Hybrid Maize Tests in European and Mediterranean Countries, 1950</i> (FAO Report)	95
	— <i>Food and Agricultural Legislation 1952: Vol. I, Nos. 1 and 2</i> (FAO Report)	95
	— <i>Improving the World's Grasslands</i> (FAO Report)	95
	— <i>World Economic Report, 1951-52</i>	95
October	— <i>Cadastral Surveys and Records of Rights in Land</i> (FAO Report)	118
	— <i>Communal Land Tenure</i> (FAO Report)	118
	— <i>The Farm and the City</i> (FAO Report)	119
	— <i>The Long-Term Contract</i> (FAO Report)	119
	— <i>Soil Surveys for Land Development</i> (FAO Report)	119
	— <i>The Trust Territory of Somaliland under Italian Administration</i>	118
December	— <i>Economic Bulletin for Europe, First Quarter, 1953: Vol. 5, No. 2</i>	143
Quebec, Farm Ownership in, Part II	A. Gosselin	11
	Part III	61
Recent Freight Rate and Transportation Developments.....	E. P. Reid	43
Saskatchewan and Eastern Alberta, Cattle Production in Western.....	S. R. Burkell	65
Sheep Production in the Maritime Provinces, Decline of	G. C. Retson	128
Some Aspects of Canadian Tariff and Trade Policy in Relation to GATT..	A. E. Richards	77
Some Aspects of Land Classification in Northern Saskatchewan..	R. A. Stutt	59
Tariff and Trade Policy in Relation to GATT, Some Aspects of Canadian..	A. E. Richards	77
United States Agricultural Policy and the Canadian Wool Position.....	M. Rachlis	130
Veterans, Farm Progress of World War II	R. A. Benedict	113
Wool Position, United States Agricultural Policy and the Canadian.....	M. Rachlis	130

THE ECONOMIC ANNALIST

B

FEBRUARY 1954

Vol. XXIV, No. 1

DEPARTMENT OF AGRICULTURE
OTTAWA, CANADA



THE ECONOMIC ANNALIST

A BIMONTHLY REVIEW OF AGRICULTURAL BUSINESS

G. P. BOUCHER, Editor

FEBRUARY 1954

Vol. XXIV, No. 1

CONTENTS

	Page
The Economic Situation.....	3
Mechanization in Canadian Agriculture..... <i>H. R. Shaw and R. C. Gilstorf</i>	5
Wheat Yields and Farm Practices on Weyburn Loam and Regina Heavy Clay Soils..... <i>M. Ragush</i>	9
Some Economic Aspects of the Prairie Farm Assistance Act..... <i>M. E. Andal</i>	12
Some Aspects of Farm Organization, Progress and Adjustments on Land Class II in the Brown Soil Zone, Saskatchewan, 1952..... <i>H. L. Biehn</i>	15
Progress of Farmers in an Area Contiguous to the Saskatchewan- Carrot River Triangle..... <i>J. Zeman</i>	18
The 1953 FAO Conference..... <i>S. C. Hudson</i>	22

MARKETING SERVICE, ECONOMICS DIVISION

J. F. BOOTH, Chief

Published by Authority of the Right Honourable James G. Gardiner
Minister of Agriculture

ANNUAL AND MONTHLY INDEX NUMBERS
WHOLESALE PRICES, FARM PRICES AND LIVING COST INDEXES

Year	Wholesale Prices 1935-1939=100				Farm Prices of Agricultural Products 1935-39 =100 (e)	Commodities and Services used by Farmers 1935-39=100		Cost of Living 1935-39=100		Consumer Price Index (1949 = 100) (i)
	(a) General Wholesale Index	(b) Farm Products	(c) Field Products	(d) Animal Products		(f) Equipment & Materials	(g) Eleven Factor Index	(h) Farm Living Costs	(i) Urban Living Costs	
1913.....	83.4					85.4		80.1	79.1	49.2
1914.....	85.4					90.2	85.3	82.3	79.7	49.6
1915.....	91.8					96.9	91.6	86.5	80.7	50.3
1916.....	109.8					101.7	100.5	93.7	87.0	54.2
1917.....	148.9					140.7	140.5	111.5	102.4	63.7
1918.....	166.0					164.1	160.2	131.1	115.6	72.0
1919.....	174.7					169.1	167.9	143.0	126.5	78.8
1920.....	203.2					190.1	186.5	171.3	145.4	90.5
1921.....	143.4					147.4	152.5	139.9	129.9	80.9
1922.....	126.8					124.6	134.1	127.9	120.4	74.9
1923.....	127.7					118.3	130.6	128.3	120.7	75.2
1924.....	129.5					122.3	131.9	125.5	118.8	74.0
1925.....	133.8					123.2	131.8	123.9	119.8	74.6
1926.....	130.3	144.4	158.5	130.2	119.9	119.9	130.6	121.1	121.8	75.9
1927.....	127.3	138.6	149.4	127.8	119.9	119.9	131.2	119.8	119.9	74.6
1928.....	125.6	136.3	134.3	138.2	118.3	118.3	129.3	118.5	120.5	75.0
1929.....	124.6	140.8	137.2	144.4	117.6	117.6	127.9	117.3	121.7	75.8
1930.....	112.9	119.5	105.8	133.3	105.6	105.6	117.0	113.7	120.8	75.3
1931.....	94.0	78.9	65.0	92.7	92.2	92.2	100.9	103.9	109.1	67.9
1932.....	86.9	65.5	60.4	70.5	89.3	89.3	93.3	97.8	99.0	61.7
1933.....	87.4	69.3	69.3	69.2	88.8	88.8	89.8	95.8	94.4	58.8
1934.....	93.4	83.5	80.5	86.5	96.8	96.8	95.5	97.9	95.6	59.6
1935.....	94.4	89.2	84.4	94.1	88.0	95.6	95.4	97.9	96.2	59.9
1936.....	96.7	97.9	102.2	93.7	96.9	98.7	98.1	98.3	98.1	61.1
1937.....	107.8	117.4	128.9	106.0	119.7	108.4	105.3	102.9	101.2	63.0
1938.....	102.0	102.9	100.9	104.8	105.0	101.2	101.7	101.9	102.2	63.7
1939.....	99.2	92.6	83.7	101.5	91.8	95.7	99.3	99.5	101.5	63.2
1940.....	108.0	96.1	85.4	106.7	96.8	101.8	106.8	108.5	105.6	65.7
1941.....	116.4	106.6	88.9	124.4	110.2	107.8	116.1	114.1	111.7	69.6
1942.....	123.0	127.1	109.7	144.6	133.1	119.2	131.6	119.0	117.0	72.9
1943.....	127.9	145.4	129.0	161.8	157.8	122.4	143.4	121.7	118.4	74.2
1944.....	130.6	155.3	144.5	166.1	172.4	126.0	148.0	122.8	118.9	74.6
1945.....	132.1	166.4	162.5	170.2	185.7	125.9	152.1	123.2	119.5	75.0
1946.....	138.9	179.5	177.9	181.2	204.1	128.0	157.0	127.1	123.6	77.5
1947.....	163.3	192.2	184.1	200.2	215.8	139.5	170.4	138.3	135.5	84.8
1948.....	193.4	232.1	200.6	263.7	255.8	173.1	197.4	162.8	155.0	97.0
1949.....	198.3	228.7	191.9	265.4	255.4	180.3	204.1	173.2	160.8	100.0
1950.....	211.2	236.7	191.9	281.4	260.8	189.9	210.4	177.6	166.5	102.9
1951.....	240.2	268.6	200.4	336.9	296.8	206.0	230.0	198.6	184.5	113.7
1952.....	226.0	249.0	220.5	277.5	272.6	215.8	243.1	210.0	187.5	116.5
1953.....						207.4	238.4	203.6		115.5
1953										
April.....	219.6	218.8	181.6	256.0	246.4	208.2	241.3	203.4	183.9	114.6
May.....	220.1	221.2	179.2	263.2	247.5				183.6	114.4
June.....	221.7	223.7	178.6	268.8	255.9				184.8	114.9
July.....	221.2	223.5	181.7	265.3	251.1				186.0	115.4
Aug.....	222.4	213.6	157.2	269.9	240.6	206.3	242.1	204.9	186.4	115.7
Sept.....	221.5	208.9	154.0	263.7	235.8				186.3	116.2
Oct.....	220.7	208.5	151.7	265.3	235.8					116.7
Nov.....	218.8	204.9	151.7	258.0	228.9					116.2
Dec.....	219.0	206.8	151.9	261.6						115.8
1954										
Jan.....										115.7

(a) Canada. Dominion Bureau of Statistics, Labour and Prices Division. *Prices and Price Indexes*. (Mimeo.) Ottawa, Monthly.

(b) Ibid. (a). Wholesale prices of products of Canadian farms.

(c) Ibid. (a). Wholesale prices of grains, hay, tobacco and potatoes.

(d) Ibid. (a). Wholesale prices of animals and animal products.

(e) Canada. Dominion Bureau of Statistics, Agriculture Division. *Index Numbers of Farm Prices of Agricultural Products*. (Mimeo.) Ottawa, Monthly.

(f) Canada. Dominion Bureau of Statistics, Labour and Prices Division. *Price Index Numbers of Commodities and Services Used by Farmers*. (Mimeo.) Ottawa, Jan., Apr. and Aug. Includes prices of commodities in 8 groups including farm implements, building materials, gasoline, oil and grease, feed, fertilizer, binder twine, seed and hardware.

(g) Ibid. (f). Includes the 8 commodities indicated above plus tax rates, interest rates and farm wage rates.

(h) *Price Index Numbers of Commodities and Services used by Farmers*. Includes food, clothing, fuel, household equipment, health, maintenance and miscellaneous.

(i) *Prices and Price Indexes*. Includes food, rent, fuel and lighting, clothing, home furnishings and services, miscellaneous and retail prices of commodities.

(j) Canada. Dominion Bureau of Statistics, Labour and Prices Division. *Price Movements*. (Mimeo.) Ottawa, Monthly.

THE ECONOMIC SITUATION

The Agricultural Outlook for Canada in 1954.¹ Prospects for sales of agricultural products in the Canadian market are generally favourable. Government expenditure programs for 1954 have not yet been established but present indications suggest that these expenditures will continue to exert an important influence on the Canadian economy. Present indications also point towards the maintenance of a high level of private capital spending. Reduced outlays in some basic industries may well be offset by larger outlays in the utility and service sectors. An expected increase in consumer income and in food consumption will likely result in a larger volume of sales of farm products in Canada.

In 1954 farmers' cash receipts from the sale of farm products may exceed the cash returns of 1953. This estimate is based on the assumption that western farmers will be able to deliver, during the first seven months of 1954, a substantial proportion of year-end carryover of grain available for marketing. It is also assumed that during the fall months of 1954 marketings will follow a normal pattern at initial prices unchanged from the 1953-54 level. If these assumptions are realized, income from the sale of field crops may be well above the estimated 1953 level as a result of heavier marketings. Although somewhat lower final grain prices for the 1953-54 crops may be reflected in smaller participation payments for oats and barley, the delaying of the final 1952-53 wheat payments until early 1954 may maintain the total payments for this crop in 1954 above the 1953 level.

Income from the sale of livestock in 1954 may not differ greatly from that realized in 1953. Cattle marketings are likely to be higher, with average prices not significantly different from those of 1953. Increased marketings of hogs may be largely offset by lower prices. No significant changes in income are foreseen for other farm commodities.

In 1954 net returns from farming operations may be somewhat lower than in 1953. This estimate is based on the assumption that during 1954 acreages will be unchanged and only average crop yields will be obtained. The expected decline in net income will result from a possibly smaller crop and the conse-

quent reduced farm inventory of grain at the end of 1954. Total farm expenses may be somewhat lower in 1954 but not sufficiently lower to offset the smaller value of year-end inventories.

The demand for farm workers during 1954 is expected to remain at the 1953 level if there is no major change in the acreage planted and if growing conditions are generally as favourable as in 1953. The labour demand and supply situation in agriculture is expected to be in better balance than it has been for some time. There will be the usual surpluses of farm workers during the winters months and regional shortages during peak harvest periods.

Prices of farm supplies—fertilizer, pesticides and farm machinery—should remain at about the levels prevailing in 1953. The supply of these commodities should be ample to meet farmers' requirements.

Railway freight traffic of agricultural products will remain at high levels in 1954 because of the large 1953 grain crop. Grain accounts for over half of the farm products tonnage. Canal traffic and overseas clearances will also be high, for the same reason, in the first half of 1954. The increase in the number of diesel-electric locomotives and the acquisition of modern rolling stock will continue and, consequently, greater rail transportation efficiency is expected. Trucks will retain their present place in the farm transport picture.

World production of wheat in the 1953-54 crop year is expected to be somewhat below the 1952-53 record. Stocks in the hands of major exporters in the fall of 1953 were about one-quarter greater than in the fall of 1952. Import requirements are still high in many areas but the combination of good crops and fairly substantial stocks in a number of importing countries may result in a moderate reduction in world trade from the postwar average of about 900 million bushels.

Total supplies of feed grains are slightly below the record established in 1952. Feed requirements, however, should be somewhat lower since there was a decrease of about five per cent in the number of grain-consuming animal units from June 1, 1952 to June 1, 1953. After allowing for substantial exports

¹Based on statements presented at the annual Federal-Provincial Agricultural Conference held in Ottawa, November 23 and 24, 1953.

of oats and barley, adequate feeding rates, and normal domestic non-feed requirements, it is apparent that carry-over stocks of these grains at July 31, will again be very large.

Increased marketings of cattle, calves, sheep and lambs, and decreased marketings of hogs are in prospect for the period October 1, 1953 to September 30, 1954, compared with the corresponding period of 1952-53. An expected larger volume of cattle and calf marketings should lead to a close relationship between Canadian and United States export prices and a slight decline in the average price in Canada. Prices of sheep and lambs will probably follow the trend of cattle and calf prices. A strong market for hogs is likely to continue until the fall of 1954. At that time, if the anticipated increase in marketings both in Canada and in the United States materializes, prices may decline more than seasonally.

More cows will be milked in 1954 than in 1953, according to present indications. Milk production is expected to exceed the record of 17.6 billion pounds set in 1945 and may approximate 18 billion pounds, if conditions are favourable.

Production of all major dairy products is expected to be slightly higher but no change is anticipated in the export demand for these products. However, export prospects for dairy products could change if foreign surplus-disposal programs interfered with trade. If current economic conditions do not change, domestic demand should increase in proportion to increases in population. No major changes in prices of dairy products are foreseen.

During most of 1953 conditions confronting poultrymen were more favourable than in 1952, and 1954 is likely to be marked by a strong demand for poultry and poultry products. Egg consumption is expected to increase at about the same rate as human population, and poultry consumption more rapidly than population. The aggressive merchandising policies adopted by the poultry industry in recent years will

tend to stabilize prices in the event of any substantial increase in supplies in 1954 compared with 1953.

Domestic supplies of edible oilseeds for 1953-54 are at record levels. Domestic requirements will still greatly exceed production and substantial quantities will be imported. Prices of edible oilseeds may increase slightly.

Supplies of inedible oilseeds for 1953-54 are below those of 1952-53, the increase in rapeseed production being more than offset by a decrease in flaxseed acreage. Some of the flaxseed and most of the rapeseed will have to be exported, either as seed or oil. Flaxseed prices declined throughout 1952-53 and are not expected to recover in 1953-54. Prices of vegetable oilcake and meal declined throughout 1952-53 but recovered slightly early in 1953-54 and it is anticipated that some further advance in prices may be recorded.

The quantity and quality of the 1953 tobacco crop were lower than in 1952 but the new farm price should be sufficient to maintain returns comparable to those realized in 1952. Exports from the 1953 crop of Canadian leaf will probably be less than those from the 1952 crop.

Production of registered and certified cereals, flax, corn, beans, and soybeans in 1953 was a little larger than in 1952. The combined seed production of alfalfa and clover was below that of 1952 but production of the principal grasses was much higher. Supplies of all principal field seeds, with the exception of double-cut or early-type red clover, will be adequate to meet normal domestic needs. There are large quantities of some kinds available for export, such as alsike, sweet clover, brome grass, creeping red fescue and registered and certified wheat and oats, and moderate supplies of alfalfa, single-cut red clover, timothy and crested wheatgrass.

Prices to growers for forage crop seeds, with the exception of creeping red fescue and Kentucky blue grass, were much lower than in 1952 and, consequently, retail prices are expected to be lower in 1954 than 1953.

Dr. J. F. Booth, Chief, Economics Division, Canada Department of Agriculture, left Ottawa in January to undertake an assignment as member of the Economic Mission to Malaya, sponsored by the International Bank for Reconstruction and Development.

MECHANIZATION IN CANADIAN AGRICULTURE

H. R. SHAW and R. C. GILSTORF

Technological developments have played a major role in the rapid expansion and diversification of production on Canadian farms, especially during the war and postwar years. Farm mechanization ranks among the first and is considered by many to have been the most important of these developments. The horse is being rapidly displaced by the tractor and other forms of mechanical power as the main supplier of power in farm work. Numerous improvements in function and design have helped increase the efficiency and adaptability of the machines in farm operations. Significant changes in crop production methods have accompanied the widespread use of the tractor and self-propelled machinery. Use of better-adapted equipment has also contributed to greater efficiency in the handling of livestock.

An indication of the rate of increase in farm mechanization is provided by statistics on sales of farm equipment and implements. The total value of these sales increased from only \$19 million in 1936 to a high of \$250 million in 1952. Sales increased every year, except in 1943, during this period. Figures presented in Table 1 illustrate the importance of the shift in emphasis from some types to other types of machines. Value of sales of planting and tilling equipment have represented a continuously decreasing proportion of the total, planting equipment making up 6.8 per cent of that total in 1936 and 3.7 per cent in 1952. The decrease in the relative importance of sales of tilling equipment is even more evident; their share of the total decreased from 29.7 per cent in 1936 to only 11.3 per cent in 1952. Sales of haying equipment represented a smaller share of the total in 1940 than in 1936 but increased in relative importance in 1950 and again in 1952. Sales of harvesting equipment have assumed an ever-increasing share of the total; these sales increased from 13.1 per cent in 1936 to 20.3 per cent of the total in 1950 and to 29.7 per cent in 1952. In each of the four years listed in Table 1 sales of tractors accounted for the largest part of the sales business. Their relative value increased from 34.3 per cent in 1936 to 44.9 per cent in 1950 but declined to 36.0 per cent in 1952.

Table 1.—Value of Sales of Farm Machinery and Equipment, by Functional Types, Canada, Selected Years, 1936-52

Functional Type	Year				Year			
	1936	1940	1950	1952	1936	1940	1950	1952
	—\$ million—				—per cent of total—			
Planting ^a	1.3	2.3	8.8	9.2	6.8	4.8	4.0	3.7
Tilling ^b	5.8	10.4	28.4	28.4	29.7	21.9	13.0	11.3
Haying.....	1.0	1.5	10.6	17.2	5.4	3.1	4.9	6.9
Harvesting.....	2.5	9.9	44.2	74.3	13.1	20.7	20.3	29.7
Tractors ^c	6.6	21.3	98.0	90.0	34.3	44.6	44.9	36.0
Miscellaneous ^d	2.1	2.3	28.1	31.2	10.7	4.9	12.9	12.4
All Types.....	19.3	47.7	218.2	250.3	100.0	100.0	100.0	100.0

^a Includes planting, seeding and fertilizer machinery.
^b Includes tilling, cultivating, weeding and plowing machinery.
^c Includes tractors and engines.
^d Includes machines for preparing crops for market or use; spraying and dusting equipment (orchard or garden); farm wagons, trucks and sleighs; water systems, pumps and septic and other tanks; dairy machinery and equipment; barn equipment; poultry equipment; and other types of farm equipment.
Source: Computed from *Farm Implement and Equipment Sales, 1936-1952*. Ottawa, Dominion Bureau of Statistics.

The actual value of the five main types of machines studied increased continuously during the 1936-1952 period except for a reduction in the value of tractor sales from \$98 million in 1950 to \$90 million in 1952. A substantial part of the increase is, of course, the result of an increase in prices. (Figures on the number of machines sold would give a more accurate picture of the changes that have taken place but figures on sales values have at least the merit of providing a reliable picture of the changes in the relative importance of various types of sales.)

The cumulative effect of the heavy volume of purchases of farm equipment and machinery, in postwar years, has increased the relative importance of that component of total farm investment. In 1936 land and buildings represented 76.8 per cent of the total investment on Canadian farms; implements and equipment, 10.7 per cent; and livestock, 12.5 per cent. In 1950 the land and buildings component had declined to 65.9 per cent of the total whereas implements and equipment had risen to 14.3 per cent and livestock to 19.8 per cent.

Table 2.—Value of Farm Machinery and Equipment Sales, Canada and Provinces, 1941 and 1951

Area	Value of Sales		Percentage of Total Sales	
	1941	1951	1941	1951
	—\$ million—		—per cent—	
Maritimes.....	1.7	6.9	3.3	2.9
Quebec.....	5.8	23.8	11.1	10.1
Ontario.....	14.3	58.7	27.4	24.9
Manitoba.....	5.9	31.7	13.3	13.5
Saskatchewan.....	12.9	61.1	24.8	26.0
Alberta.....	10.4	48.3	19.9	20.5
British Columbia.....	1.2	5.1	2.2	2.1
Canada.....	52.1	235.6	100.0	100.0

Source: Value of sales figures extracted from *Farm Implement and Equipment Sales*, 1944 and 1951.

The regional distribution of the sales was almost the same in 1951 as in 1941 (Table 2). Ontario was the largest purchaser in 1941 and ran a close second to Saskatchewan in 1951. Ontario purchases alone were almost double the value of purchases in Quebec and the Maritime Provinces. As a group, however, the Prairie Provinces were well ahead of any other group of provinces. Their collective share represented 58 per cent of the total in 1941 and 60 per cent in 1951.

The significance of regional differences is better illustrated, however, by relating sales to the number of occupied farms and the acreages in improved land (Table 3). Sales per occupied farm were much larger in the Prairie Provinces than in any other area and larger in Manitoba than in the other two Prairie Provinces. In Ontario sales per occupied farm were more than double those in Quebec and were almost four times as high as in the Maritime Provinces.

Figures on sales per occupied farm in 1941 and 1951 (Table 3) do not provide an exact description of the changes that have taken place. Farms have increased in size and the number has declined from 733,000 to 623,000 during the 1941-51 period and, thus, the figures presented in Table 3 may give an exaggerated picture of the magnitude of the actual increases and of the relative position of various areas. Analysis of the sales figures may then be strengthened by relating them to the acreage in improved farm land. Figures in the last two columns of the table indicate that in British Columbia in 1941 sales of farm machinery and equipment, per acre of improved farm land, were much higher than in most other provinces. In 1951 that province held second place; Ontario had an average of \$4.63 per acre as compared with \$4.41 for British Columbia and much lower averages for the other provinces. Averages for Quebec and the Maritime Provinces were slightly higher than averages for two of the three Prairie Provinces, the average for Quebec being \$2.70 and the highest averages being \$2.95 for Manitoba and \$2.94 for the Maritime Provinces, and the lowest \$2.58 for Saskatchewan and \$2.17 for Alberta.

Table 3.—Farm Machinery and Equipment Sales Per Farm and Per Acre of Improved Farm Land, Canada, 1941 and 1951

Area	Sales per Occupied Farm		Sales Per Acre of Improved Farm Land	
	1941	1951	1941	1951
	—dollars—			
Maritimes.....	22.2	114.7	0.62	2.94
Quebec.....	37.2	177.3	0.74	2.70
Ontario.....	80.2	391.8	1.07	4.63
Manitoba.....	101.8	605.1	0.60	2.95
Saskatchewan.....	93.2	545.9	0.36	2.58
Alberta.....	103.9	572.5	0.51	2.17
British Columbia.....	11.2	46.1	1.29	4.41
Canada.....	71.1	378.1	0.57	2.43

Source: Original sales figures from *Farm Implement and Equipment Sales*, 1944 and 1951; number of occupied farms and area of improved farm land from *Census of Agriculture*, 1941 and 1951. Ottawa, Dominion Bureau of Statistics.

Improvement in the condition of equipment and machinery on farms is indicated by the smaller proportion which repair parts form of the total value of sales of new machinery, equipment and repair parts; this proportion declined from 23·8 per cent in 1944 to 11·1 per cent in 1952. The total for 1944 was \$71,908,000 and the amount spent on repair parts was \$17,084,000, whereas in 1952 the total was \$281,509,000 and purchases of repair parts were \$31,232,000.

Another notable feature of purchases in recent years is the emphasis on machines of new design, harvesting equipment, and larger size tractors. However, there have been wide year-to-year variations in the types and sizes of tractors sold. (Figures presented in Table 4 illustrate the changes between the years 1949 and 1952). There has been a pronounced shift back to the standard type of tractor in all parts of the country as well as a shift to larger size tractors; the latter is illustrated by a marked increase in the number of 3-plow and larger tractors sold in 1952 (Table 4) even though 20,615 fewer tractors were sold in 1952 than in 1949.

Tractor sales have declined more in the Prairie Provinces than in the other provinces—a probable indication of a more rapid rate of mechanization and replacement and purchase of new machines in the early postwar years than in other parts of Canada. The horse population in the western provinces has declined to such low levels that it may not be too unreasonable to assume that the replacement of horse power by tractor power has reached its practical limits. Sales of new horse-drawn machines have become insignificant. Many of the operators still employing horses as their main source of farm power, are probably replacing their old machinery with that which has become obsolete on farms using tractors.

Table 4.—Numbers of Tractors Sold, Canada, 1949 and 1952

Types	Prairie Provinces		All Other Provinces		Canada	
	1949	1952	1949	1952	1949	1952
All tractors:	—number—					
1 and 2 plow.....	9,625	599	18,053	9,130	27,678	9,729
2-3 plow.....	10,055	1,956	6,794	7,207	16,849	9,163
3, 3-4 plow and larger.....	15,335	18,618	2,343	6,493	17,678	25,111
All standard (all sizes).....	27,109	19,430	11,496	16,682	38,605	36,112
General purpose (all sizes).....	7,906	1,743	15,694	6,148	23,600	7,891
Track type tractor.....	991	582	264	636	1,255	1,218
Garden tractors.....	1,535	1,061	4,958	3,056	6,493	4,117
Total tractors.....	37,541	22,816	32,412	26,522	69,953	49,338

Source: Computed from *Farm Implement and Equipment Sales*, 1949 and 1952.

Table 5 provides a summary of the numbers of specified machines sold in Canada in 1949 and 1952; for convenience, two columns have been added indicating the peak year and the record number of sales of each of the various machines listed in the table. The most significant increases during this three-year period relate to purchases of diskers, weed sprayers, forage crop harvesters, hay balers, combines, and equipment used with these machines. Sales of stock watering equipment have also increased. There is no evidence of an expansion in the use of milking machines, however, as it appears that most of the purchases were made only for replacement purposes.

A general review of the developments in farm mechanization indicates that the most important increases in machine numbers per farm have taken place since 1941. As indicated previously, however, some of this increase is the result of a significant decrease in the number of farms in Canada since the 1940's. According to official census figures there were almost three times as many trucks per farm, almost three times as many tractors, about five times as many grain combines and about four times as many electric motors per farm in 1951 as in 1941. A large number of farms are not equipped with the most modern or efficient machines but it is probable that many of these farms hire a large part of their farm work done or rent the necessary machines. In 1951, the Prairie Provinces had a larger number of all specified types of machines (except electric motors) per 100 farms than any other region (Table 6). The Atlantic region had considerably fewer per 100 farms than any of the other regions.

Table 5.—Sales of Specified Machines, Canada 1949 and 1952

Kind	Peak Sales		Sales		
	Year	Number	1949	1952	1952 as a Percentage of 1949
			—number—		
Mowers:					
Horsedrawn.....	1946	11,472	8,464	2,274 ^a	26.9
Tractor drawn.....	1952	9,204	3,150	9,204	292.2
Tractor mounted.....	1949	8,618	8,618	6,459	74.9
Hay loaders.....	1949	7,158	7,158	6,013	84.0
Pick-up hay balers:					
Power take-off.....	1951	2,492	1,056	1,438	136.2
Engine driven.....	1952	2,477	858	2,477	288.7
Swathers or windrowers, tractor drawn.....	1952	10,160	7,926	10,160	128.2
Forage crop harvesters.....	1952	2,039	422	2,039	483.2
Forage crop blowers or elevators.....	1952	1,466	443	1,466	330.9
Ensilage cutters.....	1950	1,441	1,088	687	63.1
Feed or roughage cutters.....	1951	880	553	225	40.7
Moldboard plows:					
Tractor drawn.....	1949	28,742	28,742	13,406	46.6
Tractor mounted.....	1951	14,974	10,089	12,657	125.5
One way discs:					
Without seed boxes.....	1949	15,095	15,095	6,235	41.3
With seed boxes.....	1948	6,625	6,324	2,127	33.6
Diskers:					
Without seed boxes.....	1951	2,079	b	1,643	.....
With seed boxes.....	1952	7,251	b	7,251	.....
Disc Harrows:					
Horse drawn.....	1946	5,427	1,953	240 ^a	12.3
Tractor drawn (single).....	1950	4,217	3,929	828	21.1
(tandem).....	1949	18,511	18,511	12,425	67.1
Field cultivators:					
Horse drawn.....	1945	1,206	425	b	.....
Tractor drawn.....	1950	20,644	16,542	13,690	82.8
Tractor mounted.....	1948	5,586	3,020	1,274	42.2
Weed sprayers.....	1951	3,468	b	2,210	.....
Milking machines (complete).....	1946	14,450 ^c	6,619	3,875 ^c	58.5
Milker pail units (sold separately).....	1946	22,735	3,462	8,062	232.9
Stock water cups and bowls.....	1952	90,281	54,604	90,281	165.3
Brooders.....	1947	21,875	8,129	5,744	70.7
Electric fence controllers.....	1944	45,413	13,728	13,014	94.8
Wagon unloaders.....	1952	603	b	603	.....
Farm freezers.....	1952	1,616	b	1,616	.....
Grain loaders and elevators.....	1952	23,038	5,415	23,038	425.4
Hammermills.....	1952	5,106	3,963	5,106	128.8
Combine reaper threshers:					
(6 feet and under).....	1952	6,303	3,649	6,303	172.7
(over 6 feet).....	1952	13,339	8,336	13,339	160.0
Grain binders.....	1946	8,930	7,219	4,219	58.4
Threshers.....	1951	2,998	2,565	2,410	94.0

^a Post-war low.^b Not listed.^c Not including milker pail units.Source: *Farm Implement and Equipment Sales*, 1944 to 1952.

The rapid rate of farm mechanization has had a significant impact on Canadian agriculture. Apparently, less progress has been achieved in Quebec and the Atlantic Provinces than in the remainder of the country. This is probably the result, at least in part, of the generally smaller size of farm in these than in other areas. In the

Table 6.—Numbers of Machines per 100 Farms, by Regions, Canada, Selected Years, 1921-1951

Farm Machine	Number per 100 Occupied Farms							
	Canada				Region—1951			
	1921	1931	1941	1951 ^a	Atlantic ^a	Central	Prairie	B.C.
Automobile.....	22 ^b	44	43	53	30	55	57	48
Motor Truck.....	^b	7	11	31	20	21	46	35
Tractor.....	7	14	22	64	20	48	95	50
Grain Binder.....	^c	59	^c	49	19	45	64	10
Grain Combine.....	^c	1	3	15	0.4	4	32	3
Electric Motors.....	^c	3	8	32	14	45	21	25

^a Includes Newfoundland.
^b Motor trucks included with automobiles.
^c Not available.
Source: Computed from *Census of Agriculture*, 1921, 1931, 1941 and 1951. Ottawa, Dominion Bureau of Statistics.

country as a whole, however, farmers have been using larger size machines and have adopted many new types of machines of greater capacity. In general, machines are in relatively good working condition and it may thus be expected that the rate of mechanization of crop production will continue to proceed at a slower pace than it did in the first five years after the war.

The increase in farm size which might have been expected with the wholesale increase in machinery use which occurred between 1941 and 1951 has not fully materialized. For practically all types of machinery, capacity (in terms of work done) increases faster than additional initial and operating costs. It can be expected, therefore, that continued and perhaps increasing pressure will be felt to continue the expansion in the size of the individual farm unit. This pressure is likely to be felt most heavily in eastern Canada.

Mechanization helps reduce the cost per unit of output and thus contributes to increasing productivity in agriculture. In addition, most machines substitute for labour with the result that much less manpower is now required per acre or per unit of output. Moreover, the vast improvement in harvesting machines and harvesting methods has resulted in a marked decrease in seasonal requirements for farm labour. The use of larger and specialized types of machines is likely to lead to an increase in custom work and in the inter-farm exchange of machine work especially on small and on medium size farm units. Full and economic utilization of farm equipment and machinery, on the other hand, usually leads to an increase in the scale of operations. Farmers may resolve this problem by adding parcels of land or other complete farm units to the one they already own. All of this tends to contribute to the depopulation of farm areas and rural centers and to the creation of new social problems in these centers. The problem of increased risk and financial burden accompanying increased size of farm and increases in machinery and other investment per farm is one felt most heavily by young farmers starting in the business.

WHEAT YIELDS AND FARM PRACTICES ON WEYBURN LOAM
AND REGINA HEAVY CLAY SOILS

M. RAGUSH

Results achieved by the most efficient and prosperous farmers demonstrate the wisdom of employing farm practices which reduce costs and increase returns. These practices vary from area to area and even from farm to farm, depending primarily on the type of soil and prevailing climatic conditions. Consequently, it is not a simple matter for a farmer to select farm practices which produce the best results. In this article an attempt is made to illustrate the benefits derived from the selection of suitable practices and to evaluate the effects of certain practices common to farming on the Weyburn loam and the Regina heavy clay soils of Saskatchewan.

The data used in making this evaluation were obtained through a study of farm practices conducted in this area in 1951 by the Economics Division of the Canada Department of Agriculture in co-operation with the Department of Farm Management at the University of Saskatchewan and the Prairie Farm Rehabilitation

Administration.¹ The first of these two farm practice studies was conducted in 1950 and the results published in the report *Farm Practices in Central Saskatchewan* by J. W. Clarke, which was issued by the Canada Economics Division at Saskatoon, Saskatchewan in 1952.

Characteristics of the Area.—The nine rural municipalities included in the study area consisted mostly of Weyburn loam and Regina heavy clay soils. The Weyburn loam area is made up of parts of the rural municipalities of Golden West No. 95, Fillmore No. 96, Chester No. 125, and the greater parts of Montmartre No. 126 and Francis No. 127. The Regina heavy clay area takes in all or parts of the following rural municipalities: Scott No. 98, Caledonia No. 99, Lajord No. 128, and Bratt's Lake No. 129. All of the survey area lies within the Dark Brown soil zone.

The topography of the land influences the type of farming and the type of farm practices carried on in each area; it varies from almost level in the Regina heavy clay area to undulating in the Weyburn loam area. The loam area is rougher than the heavy clay area. It has few stones in some places and many in others; these stones hinder field operations. Farms in the Regina heavy clay area generally have larger fields and larger and faster machines.

Yield Variability.—Under dry-farming conditions heavier-textured soils such as the clay soils usually produce higher crop yields than soils of lighter texture such as the loams. Thus, it was necessary to classify the farms according to soil type to eliminate the variation in yields caused by differences in soil. Then an attempt could be made to indicate the relationship between yield and practices.

The wheat yields of the Regina and of the Weyburn farms were studied separately. The farms having consistently low yields in 1950 and 1951 were segregated from those having consistently high yields. The difference in average yields between the low-and the high-yielding groups of farms in 1950 and 1951 was 13 bushels per acre for the loams and 14.4 bushels for the heavy clay soils. Soil and climatic conditions may explain part of this difference but variations in farm practices account for the major part.

Relation Between Wheat Yields and Farm Practices.—Farm practices were examined to determine their relation to yields, but only those practices most clearly associated with wheat production were considered in detail. The practices that showed a definite relationship to wheat yields in 1950 and 1951 were: (1) pre-seeding cultivation; (2) type of implement used for seeding; (3) depth of seeding; (4) use of fertilizer; (5) use of weed spray; (6) number of summerfallow operations; and (7) type of implement used for summerfallow operations. A number of other practices were studied and ruled out as insignificant because their application produced similar results on the low-yielding and high-yielding groups. There were, however, some indications that the effect of the more significant practices tended to obscure the association between yields and the less significant practices. Generally, the higher yields were the result of a combination of favourable practices rather than the use of any one particular practice.

Higher yields were obtained on farms where pre-seeding cultivation was done. On most of these farms the seeding was done with a drill rather than with a disc or a one-way with seeding attachment. Thus, the higher yields were the result of the pre-seeding operation and of the use of a drill.

Depth of seeding was one of the practices that farmers changed according to the moisture conditions of the soil. The farmers on heavy clay soils where surface soil moisture conditions were satisfactory found that shallow seeding produced higher yields; those on loam soils that sowed the seed deeper so that it could reach moisture, had the best results.

Fertilizer was used on a larger proportion of the high-yielding farms, and more on heavy clay soils than on the loams. There was some indication that the results obtained from the use of fertilizer were influenced by the amount of moisture in the soil. Heavy clay soils have a higher moisture-holding capacity than the loam soils and respond more favourably to the application of fertilizer. As precipitation was higher in 1951 than in 1950, the yields obtained in 1951 were correspondingly higher than in 1950.

¹For a complete report on the study see: *Farm Practices in the Weyburn Loam and Regina Heavy Clay Soils of Saskatchewan* by M. Ragush and F. F. Cline. Processed bul. Ottawa, Canada Dept. of Agriculture, Marketing Service, Economics Div., 1953.

Table 1.—Distribution of Low- and High-Yielding Farm Groups according to Number of Significant Practices, 1950 and 1951

Number of Significant Practices	Clay		Loam	
	Low-Yielding Farms	High-Yielding Farms	Low-Yielding Farms	High-Yielding Farms
	—per cent of farms—			
1950 summerfallow crop:				
0 to 3.....	79	35	79	40
4 to 6.....	21	65	21	60
1951 summerfallow crop:				
0 to 3.....	90	45	71	20
4 to 6.....	10	55	29	80

Farmers who obtained high yields were aware of the value of controlling weed growth through the use of weed spray. This was noticeable on both the 1950 and 1951 summerfallow crops and on the 1951 stubble crop. Annual heavy losses caused by weeds were substantially reduced on farms where weed spray and other proven weed control measures were used.

The findings made through the study confirm the belief that higher yields are obtained with three or more, than with a smaller number of, summerfallow operations. In addition, when a cultivator type of implement was used for at least one of the operations during the summerfallow year, yields were higher than if the disc type of implement had been used for all operations. Lack of capital rather than lack of knowledge was the limiting factor in the use of proper tillage equipment. Farmers using the disc type of implement for all summerfallow operations also preferred the cultivator type but lacked the capital needed to buy the necessary equipment. A number of other practices were studied but they did not show any significant relationship to yields.

The lack of necessary comparative data made it difficult to relate some of the practices to crop yields. For example, over 85 per cent of the farmers followed a three-year rotation. This means that the sample of farmers who followed a two- or a four-year crop rotation was too small to serve as a basis of comparison with the sample following a three-year crop rotation. The same was true for variety of wheat, rate of seeding, timeliness of operation and fall tillage.

Further study revealed that the farms with the higher yields also used a greater number of the more efficient types of practices than the farms with lower yields. These findings are illustrated in Table 1.

The use of rather inefficient farm practices is not always the result of the farmer's unwillingness to adopt better practices. Indeed, about half of the farmers interviewed said that they had specific plans in mind for a better organization of their farms and the use of better farm practices. On many farms the application of improved practices such as the use of proper machines, and use of fertilizer and chemical weed spray was impossible because of insufficient capital. It is also possible that farm practices which are desirable for the majority of farms in a community may not be suitable to one or a group of individual farms.

There are physical limitations which hinder the proper timing of farm operations. Tillage operations on rented farms may be inadequate because the farmer has a short-term or otherwise undesirable lease. The substitution of extensive cultivation for intensive cultivation may rule out the adoption of a particular farm practice for economic reasons. Thus it is reasonable to assume that seemingly desirable farm practices are not economic on all farms or in all situations.

SOME ECONOMIC ASPECTS OF THE PRAIRIE FARM ASSISTANCE ACT

M. E. ANDAL

The Prairie Farm Assistance Act first came into operation for the crop year 1939-40.¹ This legislative measure was designed to relieve the burden of distressed conditions in Western Canada. Provision was made for a levy of one per cent on all western grain (wheat, oats, barley and rye) sold in Canada and for payments to farmers in the event of crop failure in designated areas.

The Act was introduced following a decade of economic conditions which placed an unbearable load on the shoulders of farmers and of municipal and provincial governments. Wide fluctuations in crop yields, and often extremely low yields, were the main characteristics of this adverse economic pattern. As an illustration, the average of yield of wheat in Saskatchewan was less than ten bushels per acre for the ten-year period 1929 to 1938 and only 2.6 bushels per acre in 1937.² Another important feature was the very low level of agricultural prices. The average farm price for wheat in Saskatchewan was 60 cents per bushel during the years 1930-39 and reached a low of 35 cents in 1932. Cattle sold for as little as one cent per pound and the ten-year average price for the most common grade of steers for the same period was less than three cents per pound.³

These conditions resulted in the accumulation of large debts. Municipal tax collections were only 8.5 per cent of current levy and arrears in 1937. Provincial aid and relief advances receivable amounted to more than \$71 million in 1939.⁴ The total estimated agricultural debt in Saskatchewan in 1936 was \$525 million and agricultural cash income in 1937 was less than \$52 million.⁵

This was the setting in which the Prairie Farm Assistance Act first became operative. Up to the end of March 1952 over \$140 million were paid—nearly \$103 million in Saskatchewan, \$34 million in Alberta, a little over three million in Manitoba and almost a quarter of a million dollars in the Peace River District of British Columbia. Receipts under the one per cent levy amounted to about \$61.5 million; about \$33.7 million came from Saskatchewan, \$17.9 million from Alberta and almost \$10 million from Manitoba.

These payments to farmers represented a considerable amount of financial assistance. To a great extent they replaced the heavy relief expenditures that were made during the 1930's and may, therefore, be considered as an alternative to relief payments. The Act has also been referred to as a type of crop insurance. The Prairie Farm Assistance program is neither a type of relief program nor a system of crop insurance but nevertheless, it has some of the features of these two means of providing financial assistance or security.

General Features of the Act.—The Act has been amended several times since it was first introduced but these amendments will not be dealt with here. Rather, the general features of the Act as it now operates will be indicated.

Basis of Payment.—The average yield of wheat in a block or a township is the basis of payment. If the average yield of wheat in a given block or township is such that it qualifies for payment, then all farms within that township are eligible for awards whether or not their individual yields are above the category limits. A block may be as small as six sections and need not be rectangular in shape.

Awards.—There are three categories of payment:

- (a) yield of zero to four bushels per acre—\$2.50 per acre.
- (b) yield of four to eight bushels per acre—\$1.50 per acre.
- (c) yield of eight to 12 bushels per acre—ten cents for each cultivated acre for each cent (not exceeding ten) that the average price of wheat falls below 80 cents per bushel.

However, there are some restrictions on the application of these awards: a) They are made on only one-half of the farmer's cultivated acreage or a maximum of 200 acres on a farm with 400 or more cultivated acres. Thus the maximum award in the zero to four bushels-per-acre category is \$500 and in the four to eight bushels-per-acre category, \$300; b) The minimum award to the individual farmer in a block or township in the zero to four category is \$200.

¹ The Prairie Farm Assistance Act, S.C. 1939, c. 50, passed June 3, 1939, as amended, and Regulations passed under the Act.

² *Annual Report*. Saskatchewan Dept. of Agriculture, Regina, 1939. p. 54.

³ *Handbook of Agricultural Statistics*. Ottawa, Dominion Bureau of Statistics, May 1951.

⁴ *Annual Reports*. Saskatchewan Dept. of Municipal Affairs, Regina.

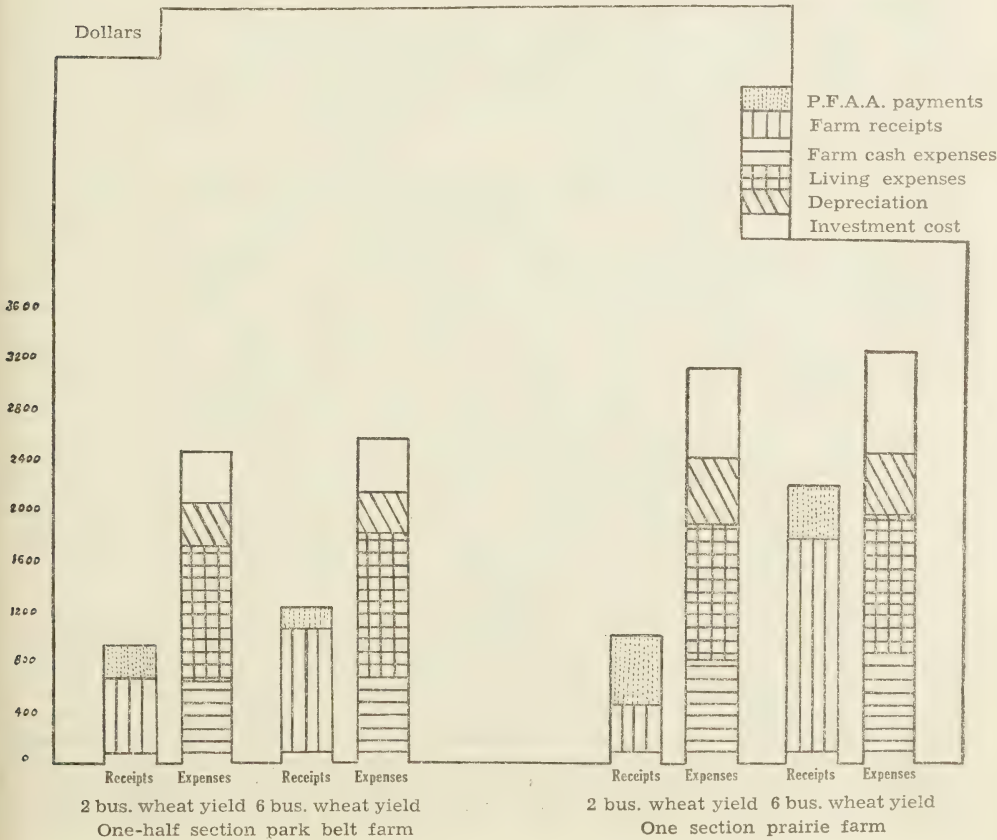
⁵ Britnell, G. E. *The Wheat Economy*. Toronto, University of Toronto Press, 1939. p. 88.

P.F.A.A. as a Stabilizing Factor.—On the average, more than \$10 million per year have been paid out to farmers of Western Canada under this program. The effect of these payments in stabilizing the position of western agriculture can best be illustrated by looking at the position of individual farmers. For this purpose, two farms were selected, one was a one-section farm in the Prairie Area, the other a half-section farm in the Park Belt. Budgets were drawn up for the two farms on the basis of data collected from farm business surveys and other sources. The P.F.A.A. payments were compared with farm receipts and expenses to provide some indication of the significance of P.F.A.A. payments to these farms.

The general price level affects the significance of these payments since the size of farm receipts and expenses is closely related to the price level. P.F.A.A. payments, on the other hand, are fixed and thus have no relation to price levels. In periods of low prices, then, P.F.A.A. payments would constitute a greater part of total income and also go farther in meeting farm and living expenses. The reverse would be true in periods of high prices. The average price level existing from 1939 to 1949 was used in preparing the data illustrated in Figure 1. This period corresponds to the period for which operations under the Act are analyzed in this article. The price level for this period could be considered a medium to somewhat higher-than-medium level of prices in the long run.

Another factor which would affect the significance of P.F.A.A. payments is the category of payment made to the farmer. In the zero to four bushels-per-acre category, payments are \$2.50 per acre whereas in the four to eight bushels category, they are \$1.50 per acre. It was assumed that the average wheat yield was two bushels per acre in the zero to four bushels category, and six bushels in the four to eight bushels category. Figure 1 shows the importance of these payments in the farm financial structure.

Fig. 1.—P.F.A.A. Payments in Relation to Farm Receipts and Expenses, Two Representative Saskatchewan Farms, 1939 to 1949.



For the half-section farm in the Park Belt, farm receipts exceeded farm cash expenses by about \$50. The excess of these farm receipts over farm cash expenses together with a \$250 P.F.A.A. payment met nearly one-third of the farm living expenses. On the one-section Prairie farm the farm cash expenses exceeded farm receipts by about \$350. More than one-half of the \$500 P.F.A.A. payment was, therefore, required to balance farm receipts and farm cash expenses. This would leave about \$150 of the P.F.A.A. payment to apply on living expenses.

With reference to the farms having a six-bushel yield, the half-section Park farm had farm receipts and a P.F.A.A. payment totalling \$1,245. These receipts met all of the cash farm expenses and paid about half of the living expenses. On the one-section Prairie farm, the farm receipts alone would meet all of the cash farm expenses and a large part of the living expenses. The addition of the P.F.A.A. payment would allow all of the living expenses to be met and also provide some income towards meeting depreciation or investment costs.

The chart shows that, generally, farm income and P.F.A.A. payments are not sufficient to cover what may be considered to be the necessary cash outlay for farm and living expenses. This would mean that in years of crop failure, the farmer would have to curtail his family living expenses somewhat or incur new debts, or even shoulder new debts while curtailing living expenses. The chart also indicates that even with the larger payments in the zero to four bushels category the farmer is worse off than he would be in the four to eight bushels category. Although the P.F.A.A. payments do not allow for normal living expenditures, they, in fact, do provide considerable assistance in meeting this outlay.

Insurance Features of the Act.—The P.F.A.A. program was not intended to be a crop insurance program. However, it includes one very important insurance provision. A levy of one per cent is deducted from the sales of all western grain. Proceeds of this levy go towards meeting the payments. To this extent, therefore, the program may be considered a modified form of insurance. A general insurance principle provides that in the long run payments or levies should equal benefits derived. An examination of the relation between levies and payments of the P.F.A.A. program indicates that a marked discrepancy existed between areas. In Manitoba, the levy amounted to more than 300 per cent of the payments received. In Saskatchewan, the levy amounted to about 33 per cent and in Alberta, to about 53 per cent of the payments received.

A more detailed breakdown of townships also indicates that there is a significant discrepancy between levy and benefits. Townships were first classified by an index of payments. This index represents the proportion of the maximum payment that could be obtained in each of the ten years from 1939 to 1949. An index of 100 would indicate that a township had received the maximum possible payment for each of the ten years. For townships in the Prairie Area with an index of payments ranging from one to 29, the levy amounted to 85 per cent of the payments received. Townships having an index of payments between 30 and 49 paid 14.3 per cent of payments received. Those having one between 50 and 69 paid 6.9 per cent; between 70 and 79, 3.3 per cent; between 80 and 89, 2.4 per cent; and those with an index of payments of more than 90 paid only 1.2 per cent of the benefits they received. In the Park Area, townships with an index of payments ranging from 1 to 29 paid 53.6 per cent. The townships with indexes between 30 and 49 paid 9.3 per cent and those with one between 50 and 69, paid 6.8 per cent.

It is, thus, seen that townships with a record of high benefits contribute a relatively small proportion of the benefits in the form of the one per cent levy. The one per cent levy collected from townships with a record of low benefits is almost adequate to meet payments in those townships. To the extent that actuarial rates should apply, some adjustment in this regard would seem necessary.

Adequacy of Average Block or Township Yields as an Indicator of Individual Yield.—The average yield in a township may not adequately indicate the individual yield of the farm and, therefore, its need of benefit payments. Recognition of this fact was acknowledged in the form of successive amendments to the Act which have reduced the area on which the category of payment is based. The requirement that such a block shall be rectangular in shape has also been eliminated. As the Act now stands a block of six contiguous sections may or may not become eligible for an award. Production records of 992 farmers were examined for the year 1950 to see how actual yields corresponded with the category of P.F.A.A. payments made

to those farms. This examination revealed that 89 farms had yields of between zero and four bushels but were paid according to the four to eight bushel category. Two hundred and eighty-seven farms had yields ranging from four to eight bushels and were paid in this category. One hundred and seventy-four farms were paid in this category but had yields of from eight to 12 bushels per acre. Fifty-nine farms were paid in this category but had yields of more than 12 bushels per acre. A similar situation existed for parts of townships.

Thus, although the size of the area to be used as the basis for determining awards has been reduced and the requirement of rectangular shape has been eliminated, it still appears that many farms had yields outside the categories for which they were paid. To overcome this difficulty, it would mean that the size of the unit would have to be reduced even more. There is some evidence to indicate, however, particularly in the crop insurance programs of the United States, that a move in this direction would carry limitations with respect to the bonusing of inefficient producers.

This analysis indicates that the Prairie Farm Assistance Act provides a considerable amount of assistance to those farmers who have lost their crops because of factors beyond their control. It is a much more desirable type of assistance than the direct relief payments of the 1930's. The study suggests that, to the extent that the program is a crop insurance program, the premium rate ought to be re-examined. Consideration might also be given to the question of the adequacy of township or block yields as indicators of individual farm needs.

**SOME ASPECTS OF FARM ORGANIZATION, PROGRESS AND ADJUSTMENTS
ON LAND CLASS II IN THE BROWN SOIL ZONE, SASKATCHEWAN, 1952**

H. L. BIEHN

Early settlers cultivated large areas of land, later graded as land Classes I and II, which should have been left in native grass. Parts of these areas have reverted to ranching or have been converted into community pastures. In areas still under cultivation, however, there is greater specialization in wheat growing. Many farms have been enlarged by the annexation of small units. But technological developments and economic conditions have led to rapid and important changes not only in the size of the individual farm units but also in the farm practices followed by most farmers in Saskatchewan. These changing conditions suggest the need for a re-appraisal of limiting factors and of the desirable adjustments which may be made through a better use and management of resources.

The Economics Division had this in mind when, in 1952, it initiated a study of farm organization, progress and adjustments in four selected blocks of the brown soil zone. It expanded its original objective, in 1953, by the inclusion of four blocks in the dark brown soil zone. A total of 644 farm business records was collected during these two years.

Some of the findings made through the analysis and interpretation of the 325 records obtained in 1952 will be used as the basis of this article.

Description of the Area.—The areas selected for study were blocks of townships in which the soil was homogeneous enough to classify as land Class II (marginal for wheat production). These areas were chosen because their physical features contributed to a rating lower than Class III. They were:

- Block I —R.M. Nos. 224, 225 (Elbow-Riverhurst) sandy loam soil;
- Block II —R.M. No. 352 (Cactus Lake) light loam soil;
- Block III—R.M. Nos. 18, 19 (Frontier-Climax) solonetzic soil;
- Block IV—R.M. Nos. 9, 44 (Glentworth-Minton) ... rough topography.

The number of records obtained from operators on land Class II farms in each of these four blocks was 77, 80, 81 and 87, respectively.

These blocks are located within the brown soil zone of Saskatchewan. This is the most arid section of the province, and it is characterized by open prairie with grassland vegetation, absence of trees and frequent droughts. The arable lands are used mainly for grain production, and the non-arable, for grazing.

Rainfall records indicate that the four blocks receive an average precipitation of less than 11 inches from April to October.

Table 1.—Size of Farm at Time of Acquisition and at Time of Survey in Four Selected Land Blocks, Saskatchewan, 1952

Size of Farm	At Time of Acquisition		At Present Time	
	No.	per cent	No.	per cent
No. of quarter sections—				
1.....	106	33.0	7	2.0
2.....	129	40.0	38	12.0
3.....	42	13.0	45	14.0
4.....	23	7.0	54	17.0
5.....	11	3.0	41	13.0
6.....	5	2.0	31	9.0
7.....	4	1.0	29	9.0
8.....	3	0.8	20	6.0
9.....	0	0.0	21	6.0
10.....	1	0.1	17	5.0
11 and over.....	1	0.1	22	7.0
Total.....	325	100.0	325	100.0

Size of Farm.—Farms averaged 946 acres in size. A comparison made between the original size and the size in 1952 indicates that a large number of them have increased their acreage to compensate for the rather low productivity of the land. Comparisons between the 1952 study area and the entire Province of Saskatchewan indicate that the average farm size in the sample was considerably larger than the average for the province.

Tenure.—The types of land tenure in the four blocks included in the survey vary considerably. Because of the low productivity of the land, tenure adjustments had to be made in order to establish economic farm units of adequate size. Thus, renting of arable lands owned by companies and other absentee landlords, and leasing of lands suitable for grazing are used as a means to facilitate these adjustments (Table 2).

Land Acquisition.—The acquisition of the first parcel in the present farm unit indicates that the land had been acquired in a variety of ways. Home-steading, purchasing and renting were the most common, but the proportion in each block acquired by these methods varied considerably.

It would appear, however, that one of the significant features of progress on land Class II was the rate of expansion and the size of farm to which farmers have developed their business rather than the method of acquisition (Table 3).

Land Utilization.—In the four blocks surveyed, 62 per cent of the land was improved. The unimproved land constituted approximately one-third of the total farm area and was used mostly for grazing. Four per cent of the total land area was idle, and three per cent was wasteland.

The improved land was sown mainly to wheat and coarse grains. Wheat acreages comprised about one-quarter of the total improved area. The amount of wheat grown on summerfallow land was over three times the amount grown on stubble land.

Coarse grains were grown on about ten per cent of the improved area: oats on four per cent, barley on five and rye on one per cent.

Cultivated grasses did not seem to be used to the extent that they might have been as only one per cent of the total improved area was sown to grasses for fodder or pasture.

Table 2.—Number of Farms, Average Size, and Type of Tenure for Saskatchewan, the 1952 Study Area and Four Selected Land Blocks, Saskatchewan, 1952

	Unit	Saskat- chewan	1952 ^a Study Area	1952 ^b Sample
Farms.....	number	112,018	22,295	325
Average farm size.....	acres	550	793	946
Full owner.....	per cent	55	44	27
Full tenant.....	per cent	15	21	10
Part owner-part tenant.....	per cent	30	35	63

^a 1952 area refers to the census divisions in which the survey was conducted.

^b 1952 sample refers to the farms visited in the survey.

Source: Figures for Saskatchewan and the 1952 area are taken from the 1951 *Census of Agriculture*. Ottawa, Dominion Bureau of Statistics.

Table 3.—Farm Size and Rate of Expansion According to Change in Net Worth Per Year, Four Selected Land Blocks, Saskatchewan, 1952

Change in Net Worth per Year	Present Farm		Number of Years on Original Farm Prior to First Addition
	Size	Total Cropland	
dollars	quarter sections	acres	years
0-100.....	3.1	339	14.6
101-500.....	4.4	481	12.1
501-1,000.....	6.1	590	7.3
1,001 and over.....	8.4	833	4.7

The Livestock Enterprises.—The survey area had a fairly large livestock population. The 6,083 head of cattle were almost evenly distributed among the four areas, but one farmer in the rough topography block kept 1,053 of the 1,656 sheep.

More farmers now keep cattle, and the average size of herd is larger than when these operators started to farm. Twenty-three per cent of the 325 operators did not have any cattle at the time of the study, and about 50 per cent of those who did had fewer than 15 head. Numbers ranged from one to one hundred and eighty-seven head of cattle per farm. At the time of the study one-quarter of the operators reported that they had more cattle than usual and one-quarter reported that they were gradually building up their herds; the remainder said that there had been little change in the sizes of their herds.

Table 4.—Number of Cattle on Farms at Time of Acquisition and at Time of Survey, Four Selected Land Blocks, Saskatchewan, 1952

Area	At Start		1952		Farms Reporting Changes in Cattle Numbers during Farming Period
	Per Cent of Farmers Having Cattle	Average Number of Cattle	Per Cent of Farmers Having Cattle	Average Number of Cattle	
I.....	40	4	72	26	per cent
II.....	57	8	93	24	29
III.....	22	6	62	21	30
IV.....	40	3	78	24	56
All areas....	40	5	77	24	40

One hundred and eighty-one farmers indicated that they planned to maintain the size of their cattle enterprise; 93 planned to increase and 13 to decrease the size of this enterprise; 24 had no definite plans and the others were not prepared to discuss their plans.

Tables 4 and 5 indicate the importance given to the cattle enterprise on land Class II farms. Most farmers consider eleven to thirty head of cattle a desirable number. Feed, available pasture and labour were given as the basis of decisions concerning desirable sizes of herds.

Table 5.—Operators' Estimates of Required Number of Cattle per Farm, 325 Operators, Saskatchewan, 1952

Desirable Number of Cattle	Area				Total—All Areas	
	I	II	III	IV		
	— number of farms —					per cent
None.....	18	16	14	18	66	20
1-10.....	3	4	8	3	18	6
11-20.....	18	17	21	35	91	28
21-30.....	25	19	20	23	87	27
31-40.....	3	13	6	4	26	8
41-50.....	8	7	6	2	23	7
50 plus.....	2	4	6	2	14	4
Total.....	77	80	81	87	325	100

Table 6.—Average Yearly Gain in Net Worth, Survey Area, Saskatchewan, 1952

Period of Starting on the Present Farm	Number of Operators	Average Yearly Gain in Net Worth	Average Number of Years on Farm
		dollars	
Before 1914.....	80	427	42
1915-1918.....	19	542	36
1919-1924.....	18	540	31
1925-1929.....	38	643	25
1930-1938.....	47	690	17
1939-1945.....	65	1,335	10
1946-1952.....	58	1,495	4
All periods.....	325	618	23

The feed situation, financial need and size of basic herd were the main factors governing the number of livestock held for the season. Financial need and price levels were used as guides in deciding when to sell livestock ready for market.

Periods of Settlement and Gain in Net Worth.—One quarter of the 325 farm operators have been on their farms 38 years or more and about one-fifth started farming during the six years prior to 1952. The average change in net worth was \$618 per year and varied from a low of \$427 for those who started farming prior to 1914 to a high of \$1,495 for those who started farming in 1946 or later.

Conclusions.—Several factors other than the period in which an operator started farming have affected his advancement. Progress made by farmers is related more directly to the factors prevailing during the entire period of occupancy than to factors present at the time of study. Successful adjustment and progress depend on a combination of factors.

Although wheat still constitutes the principal source of revenue on land Class II, other crops and livestock provide some income on most farms. The extent to which enterprises other than wheat can successfully be included depends on the characteristics and requirements of each individual farm. On land Class II, farmers will probably realize higher returns over a period of years by including livestock in their farm business so that the wasteland available for grazing purposes can be fully utilized. This appears to be more valid for farms of one section or less than for the larger farms.

Farmers have to acquire fairly large farm units on land Class II to ensure progress. A beginning farmer should ascertain what land is available before commencing operations, so that he may obtain a large unit in a short period of time.

The managerial ability of the operator is perhaps more important for land Class II farms than for farms on any of the superior classes of land in Saskatchewan. The operator must be willing to adjust his farm business quickly. Some operators have been able to show considerable progress during their life time on land Class II farms, whereas others have been forced to abandon their farms or have obtained only a poor living.

PROGRESS OF FARMERS IN AN AREA CONTIGUOUS TO THE SASKATCHEWAN-CARROT RIVER TRIANGLE

J. ZEMAN

The unsettled area of Saskatchewan that can be considered suitable for agriculture has shrunk to an estimated one million acres. The largest portion of this is commonly referred to as the Carrot River Triangle, situated between the Carrot and the Saskatchewan rivers.

In order to obtain some data concerning the possible development of this "triangle", a farm business study was conducted during the fall of 1952 in an area contiguous to it. Seventy farm operators were interviewed to secure information for the year ending April 30, 1952, which included the 1951 crop year.

The area in which these records were taken lies northeast of the town of Nipawin and north of the town of Carrot River. Farmers were interviewed in the R.M. of Carrot River, No. 486; R.M. of Nipawin, No. 487; and the former Local Improvement District No. 516.¹ The records were taken in the rural districts of Petaigan and Ravendale.

¹ A re-organization of Local Improvement Districts in 1949 resulted in the amalgamation of L.I.D. No. 485 and L.I.D. No. 516 into L.I.D. No. 950.

The soils¹ of the area were of two main zonal types, the Transition (Degraded, and Wooded Calcareous) soils and the Grey Podzolic soils. The Transitional soils range in character from the Black Grassland soils to the Grey Podzolic soils. Soil types vary in texture from sandy loam to heavy clay with all intermediate classes.

The average annual precipitation² at Nipawin for the ten-year period 1940-49 is 16.3 inches, 75 per cent of which falls during the previous fall and growing season. The summer growing season is fairly short, averaging from 105 to 110 days between killing frosts.

Most farms produce grain, livestock, and forage crops. Grain production is the major enterprise, and wheat, oats, and barley are equally important. The average yields³ for a 30-year period have been about 21, 39, and 27 bushels per acre for wheat, oats and barley respectively.

Settlement of the Area.—Settlement in the R.M. of Nipawin No. 487, adjacent to the town of Nipawin, dates from 1921 whereas the portion of the municipality in which records were taken has been settled since 1930. Settlement in the R.M. of Moose Range No. 486 and L.I.D. No. 516 has taken place since 1930. In L.I.D. No. 485, settlement has only begun. Several co-operative farms⁴ have been organized in this Local Improvement District.

Table 1.—Land Utilization on 70 Farms, Ravendale-Petaigan Area, Saskatchewan, 1951

Size of farm in quarter sections.....	Light-Textured Soil (Group 1)			Heavy-Textured Soil (Group 2)			All Farms in:		
	One	Two	Three and over	One	Two	Three and over	Group 1	Group 2	Survey
							—	—	—
Number of farms.....	14	18	9	12	10	7	41	29	70
Assessed acres.....	160	320	620	160	318	663	331	336	333
Cropland acres.....	108	230	380	135	251	553	221	276	244
Wheat.....	16	33	38	34	71	153	28	76	48
Oats.....	33	57	49	23	33	65	47	37	43
Barley.....	13	26	70	27	33	101	31	47	38
Rye and flax.....	3	12	16				9		6
Forage crops.....	10	10	82	4	27	21	25	16	21
Acres improved pasture.....	5	7	3	4	10	6	7	7	7
Summerfallow.....	26	77	118	37	72	200	69	88	77
New breaking.....	2	8	4	6	5	7	5	5	4

During the early thirties many of the farmers who were severely affected by the economic depression moved to areas such as this. Thirty-four of the seventy farmers interviewed had moved there from a prairie farm. Thirty-one of the operators had come from northern Saskatchewan but in many cases they belonged to the second generation of those farmers who had originally moved from the drought-stricken areas of the southern districts. Three operators had come from parts of Western Canada other than Saskatchewan and two from the United States.

Twenty-six of the operators were born in Saskatchewan and eighteen in other parts of Canada; three were born in the United States, nine in the British Isles, and fourteen in Europe.

Sixty-three of the seventy farmers interviewed had either farmed on their own prior to starting on their present farms, or were farmers' sons. Three had previously worked as hired men, one had been a labourer, two had been lumberjacks, and one had previously been a mechanic.

¹ Mitchell, J., H. C. Moss and J. S. Clayton. *Saskatchewan Soil Survey Report No. 13*. University of Saskatchewan in co-operation with the Division of Field Husbandry and Soils, Experimental Farms Service, Ottawa, and Dept. of Agriculture, Regina. Regina, Dept. of Agriculture, 1950. pp. 86 and 131.

² *Rainfall Records for Saskatchewan*. Bulletin No. 18. Dept. of Field Husbandry, University of Saskatchewan, Saskatoon. May 1950.

³ Supplied through the courtesy of the Supervisor of Statistics, Saskatchewan Dept. of Agriculture.

⁴ For complete report see *Annual Reports*, Dept. of Co-operation and Co-operative Development, Province of Saskatchewan, Regina.

Five were 20 years of age or younger when they started farming; thirty-one were between 21 and 30 years of age; twenty-one were between 31 and 40 years of age; ten were between 41 and 50 and three were 51 years of age or older.

Homesteaders comprised the original population of the area. Of the seventy farmers interviewed, forty-four had acquired their first parcel as a homestead; twenty-one had purchased their first parcel; three had each inherited one parcel; one farmer had purchased his through the Veterans' Land Act Administration; and one farmer held a 33-year lease from the Lands Branch of the Saskatchewan Department of Agriculture. Forty-seven farmers were full owners, twenty-two were part owners and part renters, and one held his land under a 33-year lease.

Land Utilization.—Farms averaged a little more than a half-section in size. Those having light-textured soils were 331 acres in size with 221 acres or 67 per cent of the farm in improved land. Farms on the heavy-textured soils averaged 336 acres in size with 276 acres or 82 per cent of the farm in improved land.

On the light-textured soils wheat, oats, and barley were about equally important. Fourteen farmers out of 41 did not grow wheat in 1951. Forage crops were fairly important in the crop rotation on many of the farms. Alfalfa was particularly so but there was some difficulty in obtaining satisfactory seed sets. Some farmers who depended on alfalfa as a cash crop suffered financial setbacks.

Wheat was the predominant crop on the heavy-textured soils. Only one farm (one quarter-section in size) out of 29 did not grow wheat in 1951. Barley and oats were second to wheat in importance. None of the farmers grew rye or flax, and these crops were rather unimportant for the whole area.

Livestock Enterprise.—Farms on the light-textured soils had an average of 5.7 productive animal units and those on the heavy-textured soils an average of 4.8 productive animal units per farm. Ten farms had no livestock; twenty had no cattle; twenty-four no hogs; and twenty-one no poultry. The sheep population is very small in the study area; only six of the farms included in the study raised sheep and the total for these six farms was only thirty.

Twenty-four farmers had no horses. Horses averaged 1.3 per farm and only one farmer depended entirely on them as a source of power.

Table 2.—Distribution of Farm Receipts, 70 Farms, Ravendale-Petaigan Area, Saskatchewan, 1951

	Light-Textured Soil (Group 1)			Heavy-Textured Soil (Group 2)			All Farms in:		
	One	Two	Three and over	One	Two	Three and over	Group 1	Group 2	Survey
Size of farm in quarter sections.....							—	—	—
Number of farms.....	14	18	9	12	10	7	41	29	70
	— dollars per farm —								
Receipts from:									
Crop sales.....	593	1,414	2,650	1,376	1,824	5,888	1,405	2,619	1,908
Livestock sales.....	317	697	356	276	594	430	492	423	464
Farm produce sales.....	141	259	107	69	201	50	185	110	154
Equipment sales.....	96	136	400	204	625	857	180	507	316
Custom work.....	150	116	68	47	145	157	117	107	113
Previous year's crop.....	50	78	170	—	—	68	89	16	59
Outside farm labour and other receipts.....	32	17	—	9	23	—	18	12	16
Average receipts per farm	1,379	2,717	2,751	1,981	3,412	7,450	2,486	3,794	3,030

Farm Receipts.—Crop sales provided 63 per cent of the gross farm receipts of the average farm business. Livestock and farm produce sales were more important on farms with light-textured soils. Sixteen of the farms in this soil group secured a larger income from livestock and farm produce sales than from crop sales. Only two farms in the heavy-textured soil group derived more income from livestock and farm produce sales than from crops. As yields in 1950 and 1951 were about average the carryover of grain was small. Farmers had to sell their crops as soon as possible to meet their obligations.

Table 3.—Average Annual Change in Net Worth per Farm, 70 Farms, Ravendale-Petaigan Area, Saskatchewan, 1951

Size of farm in quarter sections.....	Light-Textured Soil (Group 1)			Heavy-Textured Soil (Group 2)			All Farms in:		
	One	Two	Three and over	One	Two	Three and over	Group 1	Group 2	Survey
Number of farms.....	14	18	9	12	10	7	41	29	70
Average number of years on farm.....	15	16	16	16	16	14	16	15	16
— dollars per farm —									
Present net worth.....	10,777	15,265	32,493	13,926	18,952	33,543	17,515	20,394	16,708
Net worth at start.....	1,075	2,571	2,661	1,523	770	5,929	2,080	2,327	2,182
Average annual change in net worth per farm	617	793	1,864	775	1,136	1,972	965	1,204	1,033

Receipts from Outside Sources.—Sources of outside income were pensions, family allowances, participation certificates, off-farm labour, and legacies. The amount received from outside sources averaged \$553 per farm—\$522 per farm on the light-textured soils and \$597 per farm on the heavy-textured soils. Seventy-four per cent of the receipts from outside sources were derived from participation certificates and family allowances.

Farmers' Progress.—The average gain in net worth per year over a period of years was used to measure the financial progress made by farms. Data presented in Table 3 illustrate the variations in progress between farms having different types of soils.

In interpreting these data it must be remembered that there were circumstances or conditions tending to retard farm progress in the area under study. The first obstacle was the forest cover that had to be removed. The best that the most enterprising of the early settlers could do was to clear from five to ten acres every year. The progress was slow and the aim of operating an efficient farm unit was realized only after many years and much backbreaking effort. In recent years rapid power clearing methods have been introduced.¹ They will help speed up land improvement provided farmers have enough capital to acquire or rent the necessary power machinery and pay the other costs associated with land improvement.

Another difficulty is the frequent flooding of the area. Drainage is poor and in some cases impossible. During the year of the survey yields were low because of excess moisture. However, conservation work done on the farmers' own initiative or sponsored by governmental agencies is helping to improve the situation.

The distance from the shipping points of Carrot River and Nipawin is another inconvenience; trucking charges considerably reduce net returns to the farmer.

The settlement pattern did not always favor rapid progress. Practically every available quarter was homesteaded, and thus, no land was left for expansion of the individual farm unit. Unless he could buy his neighbour's farm, a farmer had practically no opportunity to increase the size of his farm.

¹ *Use of Power Machinery in Bush Land Improvement in Northeastern Saskatchewan.* M. E. Andal. pub. 814, farmers' bul. 153. Ottawa, Canada Dept. of Agriculture, 1948.

Canada's gross national product in the third quarter of 1953 was running at an annual rate of \$24.2 billion, much the same as in the second quarter and a little higher than in the first quarter. This stability has been accompanied by a few shifts among the major spending sectors. A levelling-off in the consumer expenditures sector was offset by a strengthening of the investment sector and the gap between exports and imports of goods and services narrowed as a result of a slight decline in imports.

THE 1953 FAO CONFERENCE

S. C. HUDSON¹

Meeting in Rome in November-December 1953, the Seventh Session of the Conference of FAO reviewed the world state of food and agriculture, approved the program of activities of the Organization for 1954 and 1955 and dealt with a number of administrative and financial questions including the level of the budget for the next two years.

The Chairman of the Conference was U. Thet Su, the delegate for Burma. The admission to membership of Lybia, Iran and Yemen increased the number of member countries in FAO to 71. In keeping with the increased membership in the Organization, the number of seats on the Council of FAO was increased from 18 to 24. Canada was re-elected to the Council for a further period of three years. The Conference re-elected Professor Josué de Castro of Brazil as Chairman of the Council for a two-year period and appointed Dr. P. V. Cardon, formerly Administrator of Research in the United States Department of Agriculture, as Director-General for the next four years, succeeding Mr. Norris E. Dodd who has been Director-General since 1948.

World Agricultural Situation.—The problem of accumulating surpluses of agricultural products in some areas of the world occupied much of the attention of the Conference. This was in contrast to the need for a general increase in production which was emphasized at the last conference. As a result of favourable weather conditions in most countries, aided to a considerable extent by production expansion and technological improvements in some areas, world agricultural production on a global basis in 1952-53 caught up with the growth in world population for the first time since 1939. By 1952-53, world agricultural production (excluding USSR, Eastern Europe and China) was about 23 per cent higher than before the war. The rate of progress, however, has been very uneven among different regions. Nearly half of the increase in world agricultural production since 1934-38 occurred in North America which contains only seven per cent of the world's population but now accounts for more than 20 per cent of its agricultural production. On the other hand, production in the Far East is still little above its pre-war level and this region, with about half the world's population, provides little more than one quarter of its agricultural output. In other under-developed regions production is beginning to move ahead of population; export supplies of grain have increased in some areas of Latin America and are also expanding in the Near East. At the same time, the recovery of production in Europe has reduced her requirements of imported food and feeding stuffs. These developments, coupled with a series of exceptionally good harvests in North America, have led to the accumulation of appreciable stocks of food in the dollar areas. But there has been little accumulation of stocks of foodstuffs in the non-dollar area until very recently, and then mainly in exporting countries where prices were still high in relation to world levels.

In most countries with developed fisheries industries, production has levelled off in the last two years owing to increasing difficulties in disposing of fishery products for human food, though there has been a continuing strong demand for fishmeal for animal feeding. In less-developed fisheries areas increases of considerable local significance have been achieved through improved catching methods, but inadequate marketing facilities and purchasing power have retarded development.

Preliminary reports indicate a continuing but slower expansion of production in 1953-54. Large crops of bread grains and coarse grains have again been harvested, except in Japan, where the rice crop has suffered as a result of storms. Some increase in world production of oilseeds, sugar, meat and dairy products is also likely. The production of fish, cotton, coffee, cocoa, tea and tobacco in 1953-54 will not likely differ much from production in the previous year.

Production in 1954-55 may be influenced by restriction programs for some commodities and no great change from the current supply situation seems likely for the remainder of the current year. The immediate outlook, therefore, hinges largely on the strength of the future demand for agricultural products, which in turn depends to a great extent on the level of general economic activity.

¹ Secretary of the Interdepartmental FAO Committee and Member of the Canadian Delegation to the Seventh FAO Conference held at Rome, Italy, November 23 to December 11, 1953.

As a result of its review of the world agricultural situation, the Conference recognized that, while there were indications of surpluses in some areas, particularly in North America, there was also a need for selective expansion of agricultural production, particularly in the under-developed areas where the level of nutrition is inadequate. It therefore emphasized the need for measures to reduce costs through increased farm productivity and more efficient distribution and pointed to the need for higher levels of consumption in many areas.

Selective Expansion of Production.—The long-term objective of FAO must continue to be that of achieving satisfactory levels of consumption of food and agricultural products in all countries of the world. In spite of the large stocks now accumulating in some areas, a large part of the world's population, especially in the less-developed regions, is ill-clad and undernourished. The differences in agricultural production between the more-developed and the less-developed regions have tended to increase. Until general economic progress of the less-developed regions raises the purchasing power of their peoples to the level where they can afford a well-balanced diet, there can be no final solution of the problem of malnutrition and no satisfactory balance of international trade in agricultural products. Encouragement should be given to increased production of the commodities in greatest demand and to maximum development in areas where additional supplies are most needed. To this end, it was suggested that certain fundamental criteria should be taken into account. These are:

- (1) Future requirements for food and agricultural products;
- (2) Agricultural potentialities of production;
- (3) Comparative costs of production; and
- (4) Social and other non-economic considerations influencing production policies.

The Conference also stressed that each country should give special attention to the achievement of the most desirable and practicable increases in domestic food consumption levels.

Commodity Problems.—In its review of the world agricultural commodity situation, the Conference gave special attention to the growing difficulties encountered in absorbing supplies of certain commodities. It was noted that as a result of expanding stocks and falling prices, production restrictions had already been applied or were being considered for the following principal commodities: peanuts, tobacco, wheat and corn (United States); cotton (United States and Egypt); jute (Pakistan); tea (India); and sugar (Cuba).

The Conference noted that national policies with respect to price incentives or supports, import controls or export subsidies, may have important effects on international trade in the agricultural commodities concerned and thus affect adversely the economies of other countries.

Particular attention was given to the United States efforts to dispose of surpluses. In this connection, Section 550 of the Mutual Security Act came in for particular consideration. At the instigation of the Argentine delegation, a resolution was adopted by the Conference setting out the following principles to be taken into consideration in the disposal of agricultural surpluses:—

“That Member Governments which have excess stocks of agricultural products should dispose of such products in an orderly manner so as to avoid any undue pressure resulting in sharp falls of prices on world markets, particularly when prices of agricultural products are generally low; That where surpluses are disposed of under special terms, there should be an undertaking from both importing and exporting countries that such arrangements will not interfere harmfully with normal trade and production in these commodities.”

At the request of the Conference, the FAO Committee on Commodity Problems set up an eight-member Working Group which is to meet in Washington towards the end of February to study the problem of the disposal of agricultural surpluses. The Working Group will include representatives of Argentina, Egypt, France, India, Netherlands, New Zealand, the United Kingdom and the United States.

Emergency Famine Relief.—The Conference considered the reports of groups of experts on emergency food reserves which were submitted in accordance with the instructions of the 1951 Session of the Conference, “to study and explore suitable ways and means whereby an emergency food reserve can be established

and made available promptly to member states threatened or affected by serious food shortages or famine". The experts recommended the creation of a centrally controlled international emergency famine fund to which member governments would contribute for the financing of aid to any country which might be confronted by famine conditions. The United States, the United Kingdom and Canada, while agreeing to the continuation of a policy of extending assistance to countries confronted by genuine famine conditions, based on the merits of the individual cases, opposed the principle of advance commitments under a central fund. France also indicated that she would not be able to contribute to such a fund. In the absence of evidence that member nations would be in a position to provide the necessary stocks or money resources, the Conference concluded that it was impracticable to create an international emergency fund. It agreed that ad hoc measures to relieve famine conditions are useful and necessary and drew the attention of member nations to the importance of providing assistance in the event of famine as speedily as possible.

Technical Activities.—The Conference reviewed the work of the Organization during the past two years and examined the proposed Program and Budget for 1954 and 1955. It was impressed by the extent to which the organization had moved from a phase in which activities were concerned largely with preliminary investigation and initial planning to action programs.

In his Annual Report "The Work of FAO—1952-53" the Director-General defines FAO's responsibility, now, as:—

- "1. maintaining an intelligence service for member governments, to be used in the action programmes the organization operates.
2. framing and developing action programmes to supplement those initiated by governments and in which FAO, on the request of such governments, is in a position to participate."

FAO collects information of two kinds—economic facts which are constantly changing, and information on technical developments which represents an addition to existing knowledge. The action programs in which FAO provides specific advice or help to Governments must be initiated through member nations. Each national Government is responsible for initiating, planning and carrying out its own development programs but can call on FAO for help to formulate and improve them. The extent of the desire of Governments for assistance is shown by the rapid expansion of the FAO Technical Assistance Programme. By the middle of 1953 no less than 624 experts were either at work in the field or had completed their assignments. Progress in such programs will invariably be slow, especially in the initial stages, and considerable time must be allowed before measurable results can be expected.

The Conference noted, with particular satisfaction, statements from several member delegations gratefully acknowledging that the activities of FAO had made a tangible contribution towards economic development and progress in their countries.

The program of technical divisions was approved by the Conference along the lines proposed by the Director-General. Consideration was given to the activities of FAO under the Expanded Technical Assistance Program and the Co-ordinating Committee was requested to consider an evaluation of technical assistance projects. Particular attention was given to the work being carried on by FAO in the reform of agrarian structures. It was agreed that the Director-General should continue to give high priority to this type of activity.

The Conference approved an annual budget of \$6 million for 1954 and 1955 to carry on the activities of the Organization. This increase from \$5½ million for 1953 is the first significant increase in the FAO budget since the Organization was established in Quebec in 1945 with a budget of \$5 million. Since that time the number of member nations has increased from 48 to 71. A large part of the increase is required to meet statutory salary increments and higher costs of allowances. Of the balance, \$150 thousand were appropriated to assist in the co-ordination of the work on locust control in the Middle East.

In addition to the regular budget, FAO will receive about \$6 million from the allocation of funds made available under the Expanded Technical Assistance Programme to carry out approved technical assistance projects in under-developed countries.

THE ECONOMIC ANNALIST

A BIMONTHLY REVIEW OF AGRICULTURAL BUSINESS

G. P. BOUCHER, Editor

APRIL 1954

Vol. XXIV, No. 2

CONTENTS

	Page
The Economic Situation.....	27
The Structure of the New Brunswick Egg Market..... <i>G. B. Murray</i>	29
Federal Agricultural Programs Affecting Prices of Farm Products, March 1, 1953, to February 28, 1954... <i>Marjorie R. Cameron</i>	32
The "Woman's Touch"—in Canadian Farm Work..... <i>Helen C. Abell</i>	37
Tariffs and the Factors Involved in Formulating Tariff Policies, with Particular References to the Fruit Industry . <i>A. E. Richards</i>	38
The Sheep Enterprise in Nova Scotia..... <i>G. C. Retson and V. A. Heighton</i>	45
Publications of the Economics Division.....	48

MARKETING SERVICE, ECONOMICS DIVISION

J. F. BOOTH, Chief

Published by Authority of the Right Honourable James G. Gardiner
Minister of Agriculture

ANNUAL AND MONTHLY INDEX NUMBERS

WHOLESALE PRICES, FARM PRICES AND LIVING COST INDEXES

Year	Wholesale Prices 1935-1939=100				Farm Prices of Agricultural Products 1935-39 =100 (e)	Commodities and Services used by Farmers 1935-39=100		Cost of Living 1935-39=100		Consumer Price Index (1949 =100) (j)
	(a) General Wholesale Index	(b) Farm Products	(c) Field Products	(d) Animal Products		(f) Equipment and Materials	(g) Eleven Factor Index	(h) Farm Living Costs	(i) Urban Living Costs	
1913.....	83.4					85.4		80.1	79.1	49.2
1914.....	85.4					90.2	85.3	82.3	79.7	49.6
1915.....	91.8					96.9	91.6	86.5	80.7	50.3
1916.....	109.8					101.7	100.5	93.7	87.0	54.2
1917.....	148.9					140.7	140.5	111.5	102.4	63.7
1918.....	166.0					164.1	160.2	131.1	115.6	72.0
1919.....	174.7					169.1	167.9	143.0	126.5	73.8
1920.....	203.2					190.1	186.5	171.3	145.4	90.5
1921.....	143.4					147.4	152.5	139.9	129.9	80.9
1922.....	126.8					124.6	134.1	127.9	120.4	74.9
1923.....	127.7					118.3	130.6	128.3	120.7	75.2
1924.....	129.5					122.3	131.9	125.5	118.8	74.0
1925.....	133.8					123.2	131.8	123.9	119.8	74.6
1926.....	130.3	144.4	158.5	130.2		119.9	130.6	121.1	121.8	75.9
1927.....	127.3	138.6	149.4	127.8		119.9	131.2	119.8	119.9	74.6
1928.....	125.6	136.3	134.3	138.2		118.3	129.3	118.5	120.5	75.0
1929.....	124.6	140.8	137.2	144.4		117.6	127.9	117.3	121.7	75.8
1930.....	112.9	119.5	105.8	133.3		105.6	117.0	113.7	120.8	75.3
1931.....	94.0	78.9	65.0	92.7		92.2	100.9	103.9	109.1	67.9
1932.....	86.9	65.5	60.4	70.5		89.3	93.3	97.8	99.0	61.7
1933.....	87.4	69.3	69.3	69.2		88.8	89.8	95.8	94.4	58.8
1934.....	93.4	83.5	80.5	86.5		96.8	95.5	97.9	95.6	59.6
1935.....	94.4	89.2	84.4	94.1	88.0	95.6	95.4	97.9	96.2	59.9
1936.....	96.7	97.9	102.2	93.7	96.9	98.7	98.1	98.3	98.1	61.1
1937.....	107.8	117.4	128.9	106.0	119.7	108.4	105.3	102.9	101.2	63.0
1938.....	102.0	102.9	100.9	104.8	105.0	101.2	101.7	101.9	102.2	63.7
1939.....	99.2	92.6	83.7	101.5	91.8	95.7	99.3	99.5	101.5	63.2
1940.....	108.0	96.1	85.4	106.7	96.8	101.8	106.8	108.5	105.6	65.7
1941.....	116.4	106.6	88.9	124.4	110.2	107.8	116.1	114.1	111.7	69.6
1942.....	123.0	127.1	109.7	144.6	133.1	119.2	131.6	119.0	117.0	72.9
1943.....	127.9	145.4	129.0	161.8	157.8	122.4	143.4	121.7	118.4	74.2
1944.....	130.6	155.3	144.5	166.1	172.4	126.0	148.0	122.8	118.9	74.6
1945.....	132.1	166.4	162.5	170.2	185.7	125.9	152.1	123.2	119.5	75.0
1946.....	138.9	179.5	177.9	181.2	204.1	128.0	157.0	127.1	123.6	77.5
1947.....	163.3	192.2	184.1	200.2	215.8	139.5	170.4	138.3	135.5	84.8
1948.....	193.4	232.1	200.6	263.7	255.8	173.1	197.4	162.8	155.0	97.0
1949.....	198.3	228.7	191.9	265.4	255.4	180.3	204.1	173.2	160.8	100.0
1950.....	211.2	236.7	191.9	281.4	260.8	189.9	210.4	177.6	166.5	102.9
1951.....	240.2	268.6	200.4	336.9	296.8	206.0	230.0	198.6	184.5	113.7
1952.....	226.0	249.0	220.5	277.5	274.5	215.8	243.1	210.0	187.5	116.5
1953.....	220.7	219.5	175.1	263.8	247.6	207.4	239.8	203.6	.....	115.5
1953										
June.....	221.5	226.6	184.5	268.7	260.5				184.8	114.9
July.....	221.0	226.5	187.6	265.3	255.7				186.0	115.4
Aug.....	222.2	213.6	157.2	269.9	240.3	206.3	243.6	204.9	186.4	115.7
Sept.....	221.2	208.9	154.0	263.7	235.6				186.3	116.2
Oct.....	220.4	208.5	151.7	265.3	235.8				.....	116.7
Nov.....	218.7	204.9	151.7	258.0	229.0				.....	116.2
Dec.....	219.0	206.8	151.9	261.6	229.5				.....	115.8
1954										
Jan.....	219.8	209.4	152.5	266.3	233.1	204.0	231.1	204.8	.....	115.7
Feb.....	219.0	208.8	152.9	264.7	234.2				.....	115.7
Mar.....									.....	115.5

(a) Canada. Dominion Bureau of Statistics, Labour and Prices Division. *Prices and Price Indexes*. (Mimeo.) Ottawa, Monthly.

(b) Ibid. (a). Wholesale prices of products of Canadian farms.

(c) Ibid. (a). Wholesale prices of grains, hay, tobacco and potatoes.

(d) Ibid. (a). Wholesale prices of animals and animal products.

(e) Canada. Dominion Bureau of Statistics, Agriculture Division. *Index Numbers of Farm Prices of Agricultural Products*. (Mimeo.) Ottawa, Monthly.

(f) Canada. Dominion Bureau of Statistics, Labour and Prices Division. *Price Index Numbers of Commodities and Services Used by Farmers*. (Mimeo.) Ottawa, Jan., Apr. and Aug. Includes prices of commodities in 8 groups including farm implements, building materials, gasoline, oil and grease, feed, fertilizer, binder twine, seed and hardware.

(g) Ibid. (f). Includes the 8 commodities indicated above plus tax rates, interest rates and farm wage rates.

(h) *Price Index Numbers of Commodities and Services used by Farmers*. Includes food, clothing, fuel, household equipment, health, maintenance and miscellaneous.

(i) *Prices and Price Indexes*. Includes food, rent, fuel and lighting, clothing, home furnishings and services, miscellaneous and retail prices of commodities.

(j) Canada. Dominion Bureau of Statistics, Labour and Prices Division. *Price Movements*. (Mimeo.) Ottawa, Monthly.

THE ECONOMIC SITUATION

Investment.—Capital expenditure in 1954 should be about \$5.8 billion up from \$5.7 billion in 1953 according to expectations current at the beginning of this year as reported in *Private and Public Investment In Canada—Outlook 1954*, a publication prepared by the Dominion Bureau of Statistics and the Economics Branch of the Department of Trade and Commerce. Since no important change in price is expected a small increase in the volume of investment should result.

Capital expenditure is usually considered under two main headings. The first is the service sector covering trade, finance and commercial services, utilities, housing, institutions and government departments. This sector, under the influence of the increased rate of urbanization in Canada, is expected to show the greatest change and should account for the 71 per cent of the total capital outlay as contrasted with 67 per cent in 1953. The record level of expenditure on housing in 1953 is expected to be surpassed in 1954. Though defence expenditures will decline, it is anticipated that additional outlays at municipal levels will bring total government expenditure slightly above last year's.

The second sector covers agriculture, fishing, forestry, construction, mining and manufacturing. Forecasts of capital expenditure in this sector for the current year indicate a decline from last year's levels. It is expected that this sector will account for 29 per cent of total capital expenditure as compared with 33 per cent in 1953. In terms of particular industries the outlook varies. Spending is expected to be down in agriculture and in certain industries such as iron and steel, non-ferrous metals and textiles. Outlays for investment in mining and petroleum are likely to be noticeably greater. Among the processing industries greater investment expenditure is intended in food and beverages, rubber products, printing and publishing, non-metallic mineral products and petroleum products.

A number of factors may affect the realization of these expectations. Those contemplated by governments and institutions are not sensitive to business changes and none of the expenditures should be affected by any shortage of materials or investment funds. Another factor of importance is the atmosphere in which the intentions were recorded. To quote the report, "... it should be borne in mind that the anticipated invest-

ment programme for 1954 is based on estimates submitted during a period of considerable apprehension and uncertainty as to the future trend of business activity".

Foreign Trade.—Foreign trade was down in January, 1954 as compared with foreign trade in the same month of 1953. Total exports were \$265.4 million in January as against \$321.3 million in January, 1953 and total imports in the corresponding months were \$281.9 million and \$327.8 million. Thus a small net import surplus occurred in January of both years—\$16 million in January, 1954 and \$7 million in January, 1953. The seasonal drop in the value of imports from December, 1953 to January, 1954 was 17 per cent and from December, 1952 to January, 1953, five per cent; the corresponding percentage declines in the value of exports were 26 per cent and 18 per cent.

Over half of the decline in exports was accounted for by lower sales to the United States market which absorbed only \$160.1 million in January, 1954 as against \$191.7 million in January, 1953. Exports to the United Kingdom also fell from \$49.5 million to \$38.1 million. Imports from the United States were \$204.5 million in January, 1954 and \$249.2 million in January, 1953 and from the United Kingdom, \$28.8 million and \$30.5 million in the same months.

Employment.—In the current year unemployment has been running at higher levels than those which existed the same part of last year. In the week ending January 23, 1954 the labour force was estimated at 5,242 thousand, of which 5.3 per cent were without jobs and seeking work. In the week ending February 20, 1954 the labour force estimate was 5,230 thousand of which six per cent were without jobs and seeking work. In the corresponding weeks of last year the percentages were 3.6 per cent and 3.4 per cent respectively. The factors contributing to the greater unemployment were the extremely cold weather prevailing through all regions which lessened outdoor work in construction, logging and sawmilling and lessened demand for the products of certain manufacturing plants, particularly those plants engaged in the production of iron and steel, footwear, wood products and textiles.

Farm Income.—Preliminary estimates place farm cash income from the sale of farm products and from grain adjustment payments on earlier crops at \$2,675

million for 1953. This is four per cent below the corresponding figure of \$2,778 million in 1952 and five per cent below the all time record receipts of \$2,812 million in 1951. Both lower prices and lower production contributed to the decline in receipts. Income from the sale of grains was slightly lower than in 1952 mainly as a result of smaller participation payments and reduced returns from the sale of coarse grains which more than offset the larger receipts from the sale of wheat. Reduced receipts from livestock sales reflect a smaller income from the sales of hogs, sheep and lambs. Income derived from the sale of potatoes was reduced substantially but gains were registered in the sales of eggs and dairy products. Farm production was between five and ten per cent lower in 1953 than in 1952. The decline in income was distributed throughout all provinces except Nova Scotia and Saskatchewan.

Prices.—Prices are in general continuing to maintain the levels first established about the middle of 1952. The consumer price index (1949=100) was 115.5 on March 1, 1954 and has fluctuated in the narrow range of 114.4 to 116.1 since May, 1952. The general wholesale price index (1935-39=100) has shown a corresponding stability during the same period, varying between 224.8 and 218.8. The index number for February, 1954 was 219.0.

Prices at the farm level were lower in February, 1954 than they were a year before. The index of farm prices was 234.2 in February, 1954 and 259.6 in February, 1953. The drop in the index of commodities and services used by farmers was much smaller, from 220.9 in January, 1953 to 220.6 in January, 1954. The farm price index for February 1954 is subject to upward revision for participation payments on grains.

Grains.—The total marketings of western grains from August 1 to February 17 of the current crop year were 254.1 million bushels as compared to 307.9 million bushels in the corresponding period of 1952-53, which was a period of abnormally heavy marketings. Exports were also lower. Total exports of wheat as grain from August 31 to January 31 were 115.8 million bushels as against 161.6 million bushels in the same months of 1952-53. Exports of oats, barley, rye and flaxseed were 113.1 million bushels, eight per cent lower.

Visible supplies of grains were considerably greater at February 17, 1954 than at the same time last year. Supplies of wheat were 368.2 million bushels at February 17, 1954 as compared to 266.7

at the corresponding date last year. Supplies of oats, barley, rye and flaxseed were, however, less—114.2 million bushels as against 135.3 million bushels.

As of February 16, 1954, the Canadian Wheat Board began to quote higher prices for western wheat at Vancouver than for the same wheat at Fort William-Port Arthur. The change was made to relieve the concentration of Canadian wheat exports at Pacific ports which had arisen when prices had been the same at both points. Foreign buyers found it cheaper to buy wheat in store at Pacific ports because they did not have to shoulder the transportation costs to the sea board of wheat purchased in store at Fort William-Port Arthur.

Butter, Cheese and Margarine.—In the first two months of 1954 the production of creamery butter totalled 20,900 thousand pounds, three per cent more than the total production of 20,158 thousand pounds in the first two months of 1953. Domestic disappearance of creamery butter was also greater by two per cent in the same period, 41,654 thousand pounds as compared with 40,823 thousand pounds.

Cheddar cheese production in January and February 1954 was 3,746 thousand pounds, up by six per cent from the 3,532 thousand pounds produced in January and February of 1953.

Production of margarine in the current year up to the end of February was 18,232 thousand pounds, less than one per cent greater than the output in the same period of last year.

Cattle, Sheep and Horses.—There were more cattle, sheep and lambs, but fewer horses on Canadian farms on December 1, 1953 than on the corresponding date in 1952. The estimated total number of cattle and calves, including milk cows, rose from 8,906 thousand to 9,371 thousand, an increase of five per cent. During the same period the number of milk cows rose from 3,013 thousand to 3,184 thousand and the number of beef cows from 1,304 thousand to 1,425 thousand. Yearling heifers being raised for milking purposes decreased from 873 thousand to 861 thousand but those being raised for beef increased from 550 thousand to 589 thousand. Steers increased from 732 thousand to 780 thousand and calves from 2,233 thousand to 2,331 thousand.

The number of sheep and lambs at December 1, 1953 was estimated at 1,161 thousand or five per cent more than a year previously and the number of horses at 1,054 thousand, a decline of seven per cent.

THE STRUCTURE OF THE NEW BRUNSWICK EGG MARKET

G. B. MURRAY

The most important point at which prices for agricultural products are usually determined is the terminal market. The demand and supply forces operating at such a point are more representative of the entire market than intermediate points in the channels of distribution. In the case of a product such as eggs, where supplies come from widely scattered areas, the terminal markets are located in large urban centers close to consumers.¹ The Montreal egg market is an example of a trading center which reflects national supply and demand conditions; prices quoted there provide a guide to outlying egg markets.

The city of Saint John is the principal egg market in New Brunswick and prices at that market follow those of Montreal very closely. A comparison of wholesale prices of Grade A Large eggs in Montreal and Saint John shows the close relationship between the two markets.

Production of shell eggs in New Brunswick has risen since 1939 but this increase has not been sufficient to offset the increase in consumer demand and New Brunswick has thus continued to be an importer from other markets. Statistics indicate that in spite of a greater production of eggs in New Brunswick, imports of shell eggs have increased sharply. Net freight unloadings² averaged 106 thousand dozen per year in the five-year period 1935-39. In the five-year period 1947-51 such shipments reached an annual average of 531 thousand dozen per year—about five times the pre-war average. In addition to carlot shipments, about as many eggs enter the province by water and as L.C.L. shipments. It is estimated that about 1.5 million dozen shell eggs were imported into the province in 1950; about 900 thousand dozen by water and L.C.L. rail shipments and 600 thousand dozen as carlot shipments.

Table 1.—Hens and Chickens, per Capita, Canada and New Brunswick, Census Years 1911-51.

	1911	1921	1931	1941	1951
—hens and chickens per capita—					
Canada	4.1	4.7	5.9	5.1	4.6
New Brunswick	2.6	2.5	3.1	2.4	2.4
Charlotte County.....	3.2	2.6	3.7	2.0	1.3
Market Area I.....	3.2	2.6	3.7	2.0	1.3
Saint John County.....	.5	.3	.4	.4	.5
Market Area II.....	.5	.3	.4	.4	.5
Carleton County.....	4.7	5.7	6.6	5.3	5.7
York County.....	2.7	2.9	4.1	3.7	5.1
Sunbury County.....	3.8	3.7	3.6	2.5	2.1
Queens County.....	5.0	4.8	5.6	3.1	2.8
Kings County.....	5.8	5.6	8.0	6.1	6.9
Market Area III.....	4.2	4.3	5.7	4.4	5.1
Victoria County.....	3.6	4.1	4.0	2.8	2.6
Madawaska.....	2.1	2.1	2.7	2.2	2.2
Restigouche County.....	1.3	1.4	1.7	2.5	1.6
Gloucester County.....	1.8	2.1	2.8	1.9	1.9
Northumberland County.....	1.7	1.9	2.3	1.5	1.8
Kent County.....	3.4	3.7	5.1	3.4	3.5
Market Area IV.....	2.2	2.4	2.9	2.3	2.1
Westmorland County.....	2.5	2.1	2.4	2.0	1.6
Albert County.....	3.6	3.4	4.7	3.2	2.2
Market Area V.....	2.7	2.3	2.6	2.1	1.7

¹ Articles on "Marketing Channels and Methods used by New Brunswick Egg Producers" and "Economic Factors Affecting Production and Distribution of Eggs in New Brunswick" appeared in the December and October 1953 issues, respectively, of *The Economic Annalist*.

² Excluding L.C.L. shipments.

In the typical price structure for eggs, prices are high at consuming centers and decline by the amount of transportation and other costs incurred in the marketing process as one moves toward the sources of supply. Available data indicate that if all of New Brunswick is considered to be one market area for eggs, it must be considered a deficit area. It is now necessary to determine if all areas in the province are deficit areas and the extent of these deficits.

The number of hens and chickens per capita in the respective market areas (subdivisions within the province) may be used as an index of the surplus and deficit areas within the province. There were 4.6 hens and chickens per capita in Canada in 1951 whereas the average in New Brunswick was 2.4—approximately one-half of the national average. In only one area of the province, Central New Brunswick, did the 5.1 average approach the national average of 4.6 birds per person. In the four remaining market areas, the average was lower than the provincial figure.

Table 2.—Prices Paid to Producers for Grade A Large Eggs by Grading Stations, New Brunswick, 1950-51

	Area I	Area II	Area III	Area IV	Area V
—cents per dozen—					
1950—					
January.....	30	31	31	31	31
February.....	37	36	37	36	37
March.....	40	39	38	38	41
April.....	38	38	38	38	41
May.....	38	36	36	35	37
June.....	40	37	37	38	40
July.....	52	48	51	47	50
August.....	56	51	53	52	52
September.....	56	54	55	54	58
October.....	60	61	57	59	62
November.....	67	58	59	60	60
December.....	62	54	57	60	60
1951—					
January.....	44	41	41	44	45
February.....	n. a.	43	43	43	45
March.....	54	49	51	51	52
April.....	51	47	50	51	52
May.....	55	54	53	n. a.	58
June.....	60	59	58	59	64
July.....	70	68	70	75	n. a.
August.....	70	66	68	70	66
September.....	65	66	66	64	68
October.....	70	66	65	70	64
November.....	65	61	63	67	63
December.....	n. a.	n. a.	n. a.	n. a.	n. a.

Source: Poultry Division, Marketing Service, Canada Dept. of Agriculture, mid-month quotations.

These data indicate that central New Brunswick is the only area in the province that produces a surplus of eggs. Since the excess must be transferred to other areas for consumption, prices during the surplus-producing periods would tend to be the prices in the consuming area less transfer and other costs. As a result, it may be expected that prices paid to egg producers in Central New Brunswick would be lower than prices paid to producers in the other market areas of the province.

Prices paid by egg-grading stations.—Prices paid by egg-grading stations in the Province should be closely related to the Saint John prices which, in turn, follow price fluctuations in the Montreal market. Eggs marketed through grading stations can move readily from one area to another and differences in price among various areas should only be transfer and other costs associated with these movements.

Transfer charges from one end of the province to the other during 1950 and 1951 were approximately two cents per dozen. Prices to producers in the five areas were not significantly different in the two years under review, when these costs are taken into consideration. These prices closely followed fluctuations on the Montreal market.

These data indicate that prices paid for eggs entering commercial egg-marketing channels in New Brunswick are closely associated with egg prices in Montreal. However, because few of the eggs sold by New Brunswick producers are marketed through egg-grading stations, it is necessary to study prices which reflect returns to producers for all eggs marketed.

Prices received for all eggs marketed.—Producers who sell eggs to retail stores, institutions and direct to consumers perform many of the marketing functions carried out by the grading stations. It was estimated in this study that, on the average, New Brunswick egg producers received about six cents per dozen for these services in the years 1950 and 1951. This margin varied throughout the year and was smallest when local supplies were seasonally plentiful and largest when local supplies were seasonally scarce. There were also variations between different market areas. Although average prices paid by grading stations in the various market areas of the province were similar, the average price paid to producers for all eggs marketed in these areas differed. Grading stations in the province paid producers an average price of 42 cents per dozen in 1950 and 52 cents in 1951. Using these prices as a basis of comparison, producers in Northern and Eastern New Brunswick earned three cents per dozen in 1950 and five and six cents per dozen respectively in 1951 for performing the additional marketing functions. In Market Areas I and II (Charlotte County and the St. John Area) producers received more than six cents in each of these years and in Central New Brunswick they received six cents in 1950 and only four cents in 1951.

Table 3.—Prices Received by Egg Producers, New Brunswick, 1950-51

	Market Area I	Market Area II	Market Area III	Market Area IV	Market Area V	Provincial Average
	—cents per dozen—					
1950.....	50	51	48	45	45	48
1951.....	64	63	56	57	58	58

Source: Unpublished data—Dominion Bureau of Statistics.

FACTORS ASSOCIATED WITH PRICE VARIATIONS

Market outlets.—Producers in market Areas I and II received higher prices for all eggs marketed than did farmers in the three remaining areas. The higher average egg prices in these two areas can be attributed partly to the fact that they are the two major deficit areas in the province. The city of Saint John is the largest urban center in the province and eggs from the surrounding area are sold either to retail stores or to consumers. The situation in Charlotte County is much the same as in Saint John County except that opportunities for direct marketing are more limited and transfer costs for moving eggs into the area are higher than into Saint John. The presence of a grading station in the area permits producers who generally follow direct marketing practices to market their eggs readily at times when local supplies exceed the requirements of the outlets they generally use. In the 1951 study of the New Brunswick poultry industry it was found that only smaller producers marketed their eggs through retail stores or direct to consumers; larger producers used only the local grading stations and hatcheries for market outlets.

The facilities of egg grading stations were not available to most of the producers in Northern and Eastern New Brunswick. When supplies of locally-produced eggs exceed immediate local requirements in these areas, small producers have no alternative but to take the price offered by local buyers since their marketings are not large enough to warrant shipping eggs to commercial market outlets.

Egg prices in Eastern New Brunswick were not as low during the periods of heavy production in 1950 and 1951 as were prices in Northern New Brunswick. This can be attributed in part to the proximity of producers in Eastern New Brunswick to the city of Moncton, which enabled them to market their eggs direct or through the local grading station.

An examination of prices received by producers in Northern New Brunswick for all eggs and the paying price for Grade A Medium eggs by the only grading station in the area, provides an interesting comparison. Prices paid by this local grading station are related to those paid in Saint John. In the two years, 1950 and 1951, producers in the area received less for their eggs during seven months of each of these years than the local grading station was paying for Grade A Medium eggs. The grading station offered the same price to local producers as to outside shippers but market distance was so great that it was not worthwhile, in the case of most small producers, to take advantage of these prices. The result was a number of small local markets in which local merchants determined the paying price to these producers. On the other hand, when local supplies were not sufficient to meet local requirements, prices in these small localized markets exceeded the paying price at the local grading station.

Quality.—The lack of commercial egg-marketing outlets in particular areas of New Brunswick only partly explains the relatively lower prices during the periods of flush production. A second factor to be considered is the quality of the product.

According to data collected through the study, in Northern New Brunswick, about 40 per cent of the eggs were marketed through retail stores. Most of the retailers interviewed stated that the quality of these eggs was low. Although eggs purchased were "producer graded" they did not ordinarily meet the standards of the egg grading regulations for the grades claimed. Most of the merchants interviewed in Northern New Brunswick, as well as in other areas of the province, said that they wished to buy eggs of high quality from a dependable source of supply but had no preference between dependable producers or wholesale egg dealers.

Egg-grading stations are available to poultrymen in about half of the province. Commercial flocks are more numerous in these areas than elsewhere in the province and egg prices paid to producers reflect conditions of national supply and demand. In the remainder of the province the poultry industry is characterized by a preponderance of small non-commercial farm flocks; markets are local and marketing problems are similar to those in areas where commercial production and marketing practices are not highly developed.

FEDERAL AGRICULTURAL PROGRAMS AFFECTING PRICES OF FARM PRODUCTS, MARCH 1, 1953 TO FEBRUARY 28, 1954¹

MARJORIE R. CAMERON

Agricultural Prices Support Act, 1944, as amended.

Dry Skimmed Milk

By June 30, 1953 the Board had purchased the ten million pounds authorized by P.C. 1953-253 of Feb. 19, 1953. This quantity had all been sold by the end of December.

Butter

<i>Authority:</i>	P.C. 1953-470, March 26, 1953.
<i>Support price:</i>	58¢ per lb. first grade creamery, basis Halifax, St. John, Montreal and Toronto, and 57¢ Vancouver.
<i>In effect:</i>	May 1, 1953 to April 30, 1955.

This order in council extended the program for a further two-year period on the same basis as it had operated from May 1, 1951. At the beginning of February 1954 the Board still held 44.7 million pounds from the 1952 and 1953 production.

Cheese

<i>Authority:</i>	P.C. 1953-855, May 26, 1953 (Ontario).
<i>Support price:</i>	30¢ per pound for first grade Ontario cheddar, f.o.b. warehouse, with appropriate differentials for other grades.
<i>In effect:</i>	This price applied to cheese produced in 1952 and held by the Ontario Cheese Producers' Marketing Association Ltd. on May 26, 1953.

¹ For information on these programs from January 1, 1950 to February 28, 1953, see the October 1950, April 1952 and April 1953 issues of *The Economic Annalist*.

<i>Authority:</i>	P.C. 1953-889, June 1, 1953.
<i>Support price:</i>	30¢ per pound for first grade Canadian cheddar, f.o.b. warehouse.
<i>In effect:</i>	Cheese produced between April 1 and Sept. 30, 1953 inclusive and remaining in the possession of the Board on Oct. 31, 1953.

Stocks of the 1952 production still held by the Board at the beginning of February 1954 amounted to about 2.1 million pounds. No purchases were made under the 1953 program.

Eggs

<i>Authority:</i>	P.C. 1953-1924, December 10, 1953.
<i>Support price:</i>	38¢ per dozen "A" large eggs, with appropriate differentials for other grades of eggs and egg products, plus an allowance to defray storage costs.
<i>In effect:</i>	1954.

This order in council authorizes a program identical with that in effect during 1953.

Hogs and Pork Products

After January 1, 1953 the Agricultural Prices Support Board did not buy any hogs or pork products under the authority of P.C. 4141 of September 24, 1952 and by April 1953 had disposed of everything except canned pork. Since January 1953 hog prices have been above the support level. By February 15, 1954 the Board had accepted a contract to sell the balance of its canned pork holdings (except for a small quantity reserved for domestic consumption) for export outside North America.

Cattle and Beef

Early in January, 1954, the Board sold the remaining stocks of frozen carcass beef to the British Ministry of Food.

The Canadian Wheat Board Act, 1935, as amended; 1953 amendment, S.C. 1952-53, c. 26, assented to May 14.

Wheat

<i>Authority:</i>	P.C. 3381, June 23, 1952 (initial price); P.C. 1953-216, Feb. 19, 1953; P.C. 1953-217, Feb. 19, 1953; P.C. 1953-218, Feb. 19, 1953; P.C. 1953-330, Mar. 5, 1953; P.C. 1953-543, Apr. 9, 1953; P.C. 1953-803, May 18, 1953; P.C. 1953-1252, Aug. 5, 1953; P.C. 1953-1479, Sept. 24, 1953; P.C. 1953-1478, Sept. 24, 1953; P.C. 1954-294, March 4, 1954; pool transfer—P.C. 1954-293, March 4, 1954.
<i>Price to producer:</i>	<i>Initial</i> price per bushel basis No. 1 Northern in store Ft. William-Port Arthur or Vancouver, \$1.40; Mar. 2/53 increased by 20¢ (No. 1 C.W. Amber Durum, 25¢); Sept. 24/53 increased by 12¢; final payment, 9.653¢ (No. 1 C. W. Amber Durum, 45.747¢); total return, \$1.81653.
<i>In effect:</i>	1952-53 pool (Aug. 1, 1952-July 31, 1953).
<i>Authority:</i>	P.C. 1953-1045, July 2, 1953; P.C. 1953-1254, Aug. 5, 1953.
<i>Price to producer:</i>	<i>Initial</i> price per bushel basis No. 1 Northern in store Ft. William-Port Arthur or Vancouver: \$1.40.
<i>In effect:</i>	1953-54 pool (Aug. 1, 1953-July 31, 1954).

The 1953 amendment to the Act:

- (1) extends to July 31, 1957 the sections of the Act which authorize the Board to act as the sole marketing agency for western wheat, oats and barley, and which deal with control of elevators and railways;
- (2) provides for annual pool periods for each of these grains until July 31, 1957;
- (3) allows the Board to close out crop accounts which have been inactive and unclaimed for more than six years; and provides for the use of such money;

- (4) authorizes the Board to charge expenses incurred through participation in international wheat marketing organizations to money arising from the sale of wheat.

Canada formally accepted the International Wheat Agreement on May 19, 1953. Effective this date the Board raised the sale price of No. 1 Manitoba Northern wheat for domestic use to \$2.05 per bushel to minimize the increase in wheat and flour inventories and facilitate the sale of flour for delivery in the new crop year. The Board will sell other grades of wheat (except Durum) for domestic use at I.W.A. prices. Durum wheat for domestic use will sell at ten cents per bushel above the I.W.A. price.

Wheat prices under the three year Agreement (August 1, 1953 to July 31, 1956) range from U.S. \$2.05 to \$1.55 per bushel, inclusive of carrying charges. Canada's guaranteed annual deliveries have been reduced to 163.2 million bushels from 235 million bushels guaranteed under the first agreement.

The 1952-53 wheat pool was closed January 30, 1954 and 127.3 million bushels were transferred to the 1953-54 pool.

Oats

<i>Authority:</i>	P.C. 3381, June 23, 1952 (initial price); P.C. 1953-1251, Aug. 5, 1953; P.C. 1953-1703, Nov. 4, 1953; pool transfer—P.C. 1953-1702, Nov. 4, 1953.
<i>Price to producer:</i>	Initial price per bushel, basis No. 2 C.W. in store Ft. William-Port Arthur: 65¢; final payment, 9.028¢; total return, 74.028¢.
<i>In effect:</i>	1952-53 pool (Aug. 1, 1952-July 31, 1953).
<i>Authority:</i>	P.C. 1953-1045, July 2, 1953; P.C. 1953-1255, Aug. 5, 1953.
<i>Price to producer:</i>	Initial price per bushel, basis No. 2 C.W. in store Ft. Port Arthur: 65¢.
<i>In effect:</i>	1953-54 pool (Aug. 1, 1953-July 31, 1954).

Unsold stocks of oats in the 1952-53 pool totalling 12,787,444 bushels were transferred to the 1953-54 pool on October 9, 1953. Distribution of final surplus in the 1952-53 pool was approved on November 4, 1953.

Barley

<i>Authority:</i>	P.C. 3381, June 23, 1952 (initial price); P.C. 1953-215, Feb. 19, 1953; P.C. 1953-329, March 5, 1953; P.C. 1953-1253, Aug. 5, 1953; P.C. 1953-1801, Nov. 19, 1953; pool transfer—P.C. 1953-1800, Nov. 19, 1953.
<i>Price to producer:</i>	Initial price per bushel, basis No. 3 C.W. Six-Row in store Ft. William-Port Arthur: 96¢; Mar. 2, 1953 increased by 15¢; final payment, 13.357¢; total return, \$1.24357.
<i>In effect:</i>	1952-53 pool (Aug. 1, 1952-July 31, 1953).
<i>Authority:</i>	P.C. 1953-1045, July 2, 1953; P.C. 1953-1255, Aug. 5, 1953.
<i>Price to producer:</i>	Initial price per bushel, basis No. 3 C.W. Six-Row in store Ft. William-Port Arthur: 96¢.
<i>In effect:</i>	1953-54 pool (Aug. 1, 1953-July 31, 1954).

On October 30, 1953, the 17,585,852 bushels of barley remaining in the 1952-53 pool were transferred to the 1953-54 pool and distribution of the final surplus in the pool was authorized November 19, 1953.

Agricultural Products Co-operative Marketing Act, 1939, as amended.

Ranch-bred fox pelts

<i>Authority:</i>	P.C. 1954-155, Feb. 3, 1954 (Prince Edward Island).
<i>Initial payment:</i>	Approximately 33% of the average returns to producers during the previous three years.
<i>In effect:</i>	1953 pelts (1953-54 agreement).

The Minister of Agriculture signed agreements with two co-operatives for the marketing of ranch-bred fox skins pelted after November 1953 and delivered to the processor before May 1, 1954. Under this agreement general operating expenses for the first time include cold storage, insurance while in storage, and interest on loans for initial payments.

Cheese

- Authority:* P.C. 1953-745, May 13, 1953 (Ontario).
- Initial payments:* 24¢, 23¢ and 22¢ per pound for first, second and third grades respectively, of white, unwaxed, Ontario cheddar, f.o.b. factory, plus a maximum allowance to defray selling costs. These prices amounted to approximately 80% of the average producer prices during the previous three years.
- In effect:* 1953 production until March 31, 1954.

At the request of the Ontario Cheese Producers' Association Limited in the spring of 1953, the Minister of Agriculture extended the final marketing date under the 1952 agreement from March 31 to June 30, 1953 for disposal of stocks held by the Association.

The total guaranteed initial payments under the 1953 agreement were the same as those in 1952.

Turkeys

- Authority:* P.C. 1953-1637, October 28, 1953 (Quebec); P.C. 1953-1638, October 28, 1953 (Quebec).
- Initial payment:* Approximately 40% of the average price paid producers in the last three years.
- In effect:* For turkeys produced in 1953 in specified regions of Quebec and delivered to the processors by December 31, 1953.

Terms of the two agreements for marketing turkeys in 1953 are similar to those of the 1952 agreement.

The dressed weight of turkeys in pool A was to be under 18 pounds, and all poultry in this pool was to be sold by the processors on or before February 28, 1954.

Pool B consisted of turkeys weighing 18 pounds or more, dressed weight, which were to be processed and sold on or before June 30, 1954.

The agreements specified appropriate price differentials for various grades in both pools. The maximum quantity which could be delivered to the processor under each agreement was 500,000 pounds, unless increased by order of the Minister of Agriculture.

Apples for processing

- Authority:* P.C. 1953-1128, July 17, 1953 (Quebec).
- Initial payment:* Approximately 31% of the average price paid producers in the last three years.
- In effect:* 1953 crop (from August 15, 1953).

The terms of this agreement are identical with those for marketing the 1952 crop. The processors agree to market the finished product by August 31, 1954 unless the Minister of Agriculture extends the marketing period.

Apples for fresh consumption

- Authority:* P.C. 1953-1757, Nov. 10, 1953 (Quebec).
- Initial payment:* Approximately 35% of the average producer price in the previous three years.
- In effect:* 1953 crop to May 31, 1954.

Under the agreement apples were to be delivered to the co-operative by October 31, 1953, for sale through one of three pools: (1) McIntosh red; (2) Fameuse; (3) Cortland. The co-operative agreed to keep a separate sales account for each pool.

Apricots, prunes and peaches

<i>Authority:</i>	P.C. 1953-1250, August 5, 1953 (British Columbia).
<i>Initial payments:</i>	The total maximum guarantees (initial payments plus allowances for processing, carrying and selling costs) were: apricots—about 50% prunes —about 35% peaches—about 50% of the average producer prices during the previous three years.
<i>In effect:</i>	For the 1953 crop until March 31, 1954.

Under authority of this order in council the Minister of Agriculture and the selling agency signed three marketing agreements—one each for peaches, prunes and apricots. The terms provided for suitable differentials in initial payments for various grades of each of the three fruits, and maximum handling costs for fruit sold for fresh consumption as distinct from fruit to be processed. The selling agency agreed to pay primary producers the initial payments specified in the agreements for the different grades of fruit in each of the pools and to keep a separate sales account for each grade to facilitate payments to producers. Returns are pooled on a grade basis and deductions made for processing, carrying and selling costs.

Potatoes

<i>Authority:</i>	P.C. 1953-1299, August 13, 1953 (Prince Edward Island); P.C. 1953-1892, Dec. 3, 1953 (New Brunswick).
<i>Initial payment:</i>	For Canada No. 1 grade table stock, and certified and certified foundation seed potatoes: Approximately 40% of the average price to producers during the previous three years in each province.
<i>In effect:</i>	1953 crop deliveries to the selling agency to June 30, 1954 or until deliveries are discontinued after reasonable notice from the Minister of Agriculture.

The Prince Edward Island agreement provides that potatoes will be marketed through five separate pools, the first for table stock potatoes and the other four for certified and certified foundation seed potatoes. New Brunswick potatoes delivered to the selling agency will be marketed through three pools: (1) table stock; (2) certified foundation seed; and (3) certified seed.

Forage crop seeds

<i>Authority:</i>	P.C. 1953-1249, August 5, 1953 (Sask.); 1953-1407, September 17, 1953 (Alta.), as amended by P.C. 1953-1639, October 28, 1953.
<i>Initial payment:</i>	Approximately 24% of the average returns to producers during the previous three years for like grades and qualities.
<i>In effect:</i>	1953 crop (1953-54 agreement).

Agreements authorized by these orders in council were identical with those under which forage crop seeds of the 1952 crop were sold. Maximum allowance to defray processing, carrying and selling costs remained the same. Order in council P.C. 1953-1639 lowered by 2¢ per pound the initial payment for alsike seed delivered under the Alberta agreement on and after October 15, 1953. Final delivery dates for all seeds were December 15, 1953 under the Saskatchewan agreement and January 15, 1954, under that for Alberta.

THE "WOMAN'S TOUCH"—IN CANADIAN FARM WORK

HELEN C. ABELL

It is a common experience to hear a farm woman modestly say that she really doesn't do any farm work. Yet in a single day she may have weeded a vegetable garden, washed and sterilized milking equipment, fed and watered a flock of fowl, gathered and cleaned several dozen eggs, and also have made a trip to town in the family truck to obtain a needed part for a farm machine—all in addition to her normal household duties.

Some understanding of the importance and nature of the farm labour role of women may be gained by an analysis of data provided by a representative sample of farm operators in two mixed farming areas of Central Alberta in 1952. This sample included 202 of the 1,200 farm operators in the two areas.

The majority (173) of these farm operators were married men living with their wives. There were no adult women on 19 of the farms which were operated by men who were either bachelors, widowers, or separated from their wives. Six of the farm operators, although bachelors or widowers, had adult female relatives keeping house for them. Four of the farm operators were widows; they were responsible for the management but all had adult sons working on their farms.

What effect, if any, did these women have on the farm business? In order to provide an answer to this question each farm business was examined to determine the existence of any relationships between the presence or absence of a farm wife or housekeeper and: (1) the number of productive man work units (PMWU) per farm; (2) the working force in man equivalents; and, (3) labour efficiency.

Table 1.—Farm Production as Related to the Presence of Women on Farms in Two Mixed Farming Areas, Central Alberta, 1952 ^a

Productive Man Work Units	No adult woman on farm	Adult woman on farm ^b	Husband and wife on farm	Average
	—per cent of farms—			
Low (265 or less).....	63.2	40.0	29.5	33.2
Medium (266-429).....	26.3	40.0	33.5	33.2
High (430 or over).....	10.5	20.0	37.0	33.6
Total, per cent.....	100.0	100.0	100.0	—
Total, number.....	19	10	173	202

^a Significant at the .05 level.
^b These are farms where there is no husband-wife relationship. They include farms where bachelors and widowers have female relatives acting as housekeepers, and farms which are operated by widows.

The volume of farm production (as measured in PMWU's) was greater on farms operated by married men than on other farms, and lowest on farms where there were no adult women. This statement is illustrated in Table 1.

The farm working force (as measured in man equivalents) was largest on those farms where an adult woman lived (either a farmer's wife or housekeeper). The evidence for this statement is found in Table 2 which has a statistical significance above the 95 level.

Labour efficiency (the productive work accomplished in relation to the farm working force) showed no statistically significant relationship to the presence or absence of women on the farm. However, a low level of labour efficiency (low being 163 or less) was found on almost half (48 per cent) of the farms where there was no farm wife, but on less than one-third (31 percent) of the farms on which there was a farm wife.

These findings indicate that more farm work is accomplished, and is handled by a larger working force, on farms where there are women (and particularly when these women are the wives of farm operators), than on farms which are lived on and operated by men alone.

Table 2.—Size of Farm Working Force as Related to the Presence of Women on Farms in Two Mixed Farming Areas, Central Alberta, 1952 ^a

Man Equivalents	No adult woman on farm	Adult woman (Not operator's wife)	Husband and wife on farm	Average
	—per cent of farms—			
Low (1.4 or less).....	63.2	40.0	30.1	33.6
Medium (1.4—2.0).....	21.0	10.0	36.4	33.6
High (over 2.0).....	15.8	50.0	33.5	32.8
Total, per cent.....	100.0	100.0	100.0	—
Total, number.....	19	10	173	202

^a Significant at the .05 level.

The fact that no significant effect on labour efficiency can be attributed to the presence of farmers' wives or female housekeepers, is probably the result of the type of farm work handled by the women in the study areas.

The type of farm work and the proportion of women who habitually performed this work were found to be: care of poultry, 78 per cent; gardening, 72 per cent; cleaning of milk equipment, 69 per cent; milking, 61 per cent; keeping farm account books, 48 per cent; field work, 29 per cent; feeding livestock, 26 per cent. Nearly all of the women (94 per cent) performed one or more of these types of farm work. In addition 41 per cent of them carried water into the house.

The women all lived on mixed farms such as may be found across this nation. Their share of farm work is merely hinted at by the data which have been presented. Much more important is the growing realization of the part Canadian farm women play as partners with their husbands in the total agricultural picture, in planning and working for satisfying and successful farm and family units. These units are literally the "grass roots" of Canadian life.

TARIFFS AND THE FACTORS INVOLVED IN FORMULATING TARIFF POLICIES, WITH PARTICULAR REFERENCE TO THE FRUIT INDUSTRY¹

A. E. RICHARDS

Canadian tariff policy is determined by the government. Since customs duties are a tax on the citizens of Canada and therefore a source of revenue, the main responsibility of rates of duty on imports rests with the Department of Finance. A number of Departments, including the Department of Agriculture, are concerned with foreign trade and therefore with the tariff but the Minister of Finance is regarded as the custodian of the Canadian customs tariff. He is the Minister who is most directly responsible for changes in this tariff.

The Minister of Finance clearly stated the government's policy on tariffs and trade in an address he made in Montreal on February 9, 1950. He said:

Given the basic features of our economic structure and the heavy dependence on trade, I believe that the only appropriate policy for Canada with respect to tariffs and other trade barriers is to get them down to reasonable levels and keep them down, both here and abroad. I believe that the prosperity of Canada as well as other countries will be fostered, if by removing excessive trade barriers, countries will specialize in the production of the things they are good at and exchange them for the goods that other countries produce more cheaply. For this reason we must encourage by every means at our disposal policies and practices which make possible the broadest exchange of goods.

¹ Prepared for the 65th Annual Convention of the British Columbia Fruit Growers' Association, Penticton, B.C., January 20, 1954.

He reaffirmed the Canadian government's trade policy in New York on November 5, 1953 when he said:

We are therefore strong advocates of moving as rapidly as possible to the highest practical levels of free and fair trade on a multilateral basis.

Multilateral trade in its simplest terms means that a citizen of any country is free to sell anywhere in the world to the best advantage and he is free to buy in the cheapest market. Under such a system there is the minimum of government interference in the purchase and sale of goods. Tariffs are at a moderate level. There is a minimum of subsidization of exports and buyers can import freely without encountering restrictive quotas and licences.

The Minister of Finance takes a broad view of things in the policy statement. He is not thinking of any group interest or a Canada isolated from the rest of the free world. He appears to be looking at the broad national interest and Canada's relation with her trading partners. He believes that it would be in the interest of the Canadian people, and all people of the free world, to co-operate and work together to reduce trade restrictions and other economic barriers.

When speaking in Montreal in September 1953 the Prime Minister made it clear that trade cannot be turned on and off like the water behind a tap to suit the convenience of a particular moment or a particular group.

After commenting on the valuable contribution the United States has made to a more balanced trade in the world he urged that North America should continue a policy where countries are encouraged to produce and sell the things which they can do best. In summing up his position the Prime Minister said:

What I am trying to suggest is that the United States and Canada should maintain a strong bias towards freer trade in their commercial policies . . . We Canadians ask for as free trade with the United States as can reasonably be achieved without upsetting yours or our economy . . . We ask for no special favours that you would not grant to the rest of the free nations.

The excerpts from the speeches of the Prime Minister and the Minister of Finance are pretty clear indications of the trade and tariff policies of the Canadian government. And how have these policies been implemented in practice?

In 1935 Section 10 was written into the Customs Tariff. The section reads as follows:

10. The Governor in Council may by Order in Council make such reductions of duties on goods imported into Canada from any other country or countries as may be deemed reasonable by way of compensation for concessions granted by any such country or countries. 1935, c. 28, s. 3.

As part of a mutually advantageous bargain the Governor in Council is authorized to reduce the tariff; only Parliament may raise the customs duties.

It is under the authority of Section 10 that officials representing the Canadian government have negotiated trade and tariff agreements since 1935 including the important postwar trade agreements under the General Agreement on Tariffs and Trade (GATT).

Of those the 1947 Agreement, known as the Geneva Agreement, was negotiated by Canada and 22 other countries including the United States and the United Kingdom which are our most important trading partners.

A second round of tariff and trade negotiations was held in Annecy, France, in 1949 when 10 additional countries signed the GATT.

A third round of negotiations was held in Torquay in the winter of 1950-51 when six new countries, including Germany, subscribed to the agreement.

The General Agreement consists of two essential parts:

1. The general provisions and principles under which members to the agreement agree to carry out their commercial relations. It is a code of conduct in international trade.

2. A schedule of the tariff concessions negotiated at the trade conferences.

In the interest of expanding trade all countries represented at Geneva, Annecy and Torquay agreed to enter into negotiations to reduce existing tariffs and other barriers to trade.

It was agreed that any tariff concessions or benefits extended by any one member country to another would be extended to all members of the agreement. This is known as the most-favoured-nation treatment or the MFN rate of duty.

Following this principle any tariff concession made by a member country to another is generalized so that all member countries get the lower rate.

For example, the United States in tariff negotiations with Chile in 1947 reduced the U.S. import duty on onions from $2\frac{1}{2}$ cents per lb. to $1\frac{3}{4}$ cents per lb. Chile paid for that concession by a compensatory reduction in her tariff. Under the MFN principle the reduced rate of $1\frac{3}{4}$ cents per lb. was extended to Canada, you might say, free of charge.

The U.S. negotiated the tariff on cabbage with the Netherlands. The U.S. import rate was reduced by 50 per cent from $1\frac{1}{2}$ cents per lb. to $\frac{3}{4}$ cents per lb. Canada fell heir to this reduction in the U.S. duty without making any compensatory concession.

In the case of turnips and rutabagas the U.S. negotiated this item in her tariff with Canada who has been traditionally the chief supplier of turnips to the United States. The U.S. reduced the duty by 50 per cent from $12\frac{1}{2}$ cents per 100 lb. to $6\frac{1}{4}$ cents per 100 lb. Under the MFN principle the reduced rate of $6\frac{1}{4}$ cents was extended to all members of the agreement although in this case Canada paid for the concession by an offsetting reduction in some item or items in the Canadian tariff but not necessarily on the same product.

It was agreed at Geneva that moderate tariffs were a legitimate form of protection to producers and they were to be the only barrier to complete free trade between member countries.

It was also agreed that customs duties would be subject to reduction or elimination through tariff negotiations.

Accordingly it was decided that, subject to negotiation, countries would be permitted to use tariff protection. All other forms of protection, including quotas and other trade restrictions, were as a general rule outlawed. Specific exceptions to meet specific difficulties were provided for.

There are three important escape clauses in the General Agreement and the circumstances under which they can be used are frequently misunderstood.

The No. 1 escape clause which can be used by a country in balance of payments difficulties due to depletion of foreign exchange reserves is in general use outside the dollar area.

In Canada any citizen can walk into any bank and exchange dollars for any foreign currency in order to import merchandise from any country in the world. Canadian foreign exchange reserves are strong and the currency is fully convertible, therefore Canada is not entitled to resort to restrictions on trade and exchange under this escape clause.

No. 2 escape clause permits a member of GATT to impose restrictions on imports of agricultural or fisheries products if it is carrying out a general governmental program to reduce production or marketing. For example, if the Federal government in order to deal with a burdensome surplus effectively reduced the production of potatoes through acreage control by say 30 per cent, it could reduce imports by the same percentage in relation to a representative period. This escape clause does not provide for a complete embargo. Its purpose is to make a crop reduction program workable. It is not intended to be used as a means of protection against reasonable competition. No country has used this escape clause to justify any restrictions which it may be maintaining.

No. 3 escape clause permits a country in an emergency to withdraw or modify a concession or obligation under the Agreement.

Three sets of conditions have to be fulfilled:

- (1) Imports must enter in such increased quantities as to cause serious injury to producers and the emergency situation must be the result of tariff concessions or obligations under the Agreement.
- (2) The withdrawal of the obligation must be for a limited period only.
- (3) There must be consultation with the Contracting Parties.

The United States is the only country which has taken any action under this clause. The U.S. action affected the trade of Czechoslovakia, Belgium and Turkey. These countries retaliated by taking compensatory action. In the case of Turkey the United States reduced its import duty on dried figs from 5 cents to $2\frac{1}{2}$ cents per lb. in 1949. In 1951 the U.S. took emergency action under this clause and re-imposed a duty of $4\frac{1}{2}$ cents per lb.

It is sometimes suggested that the terms of the agreement restrict our freedom to act independently and quickly to protect our home producers against imports. It must be remembered however that by this international agreement our exports are accorded similar treatment and our rights are protected abroad. It is on this balance which is pretty much the application of the golden rule that an international agreement stands or falls.

It was further agreed that the negotiated tariff concessions at Geneva, Annecy and Torquay would be set down in a schedule and that these scheduled rates of duty would not be changed for the life of the agreement.

This is a commitment entered into by Canada and the other contracting parties and cannot be changed without nullifying or impairing the concessions.

Of course if the Canadian Parliament decides that insufficient benefit is derived from the agreement Canada can withdraw from the agreement. However, most people apparently agree that the advantages of being in the agreement far outweigh the disadvantages of being outside.

The schedule of all tariff concessions under GATT has been printed and distributed to all member countries. Anyone can purchase a copy from the United Nations at New York or its agencies. The Canadian agency is the Ryerson Press in Toronto.

Schedule V in this volume contains the Canadian list of tariff concessions. The Canadian schedule includes about 1,000 items on which Canada made concessions in the customs duty. The items include everything from cabbages to typewriters and locomotives.

In the five volumes of tariff schedules which contain the concessions made by each of the 34 countries in GATT there are approximately 58,000 items. Each item is identified by a number and a description of the product. The rate of duty is shown.

Fresh peaches are found under item No. 92(d) in the Canadian customs tariff. It is found under the same number in the international tariff schedule and reads as follows:

92(d) Peaches; fresh:—

9 weeks.....	per pound.....	$1\frac{1}{2}$ ct.
Otherwise		10 p.c.

In the U.S. section of this international tariff schedule peaches are listed under item 745 as follows:—

745 Peaches; Green, ripe or in brine

If entered during the period from June 1 to

November 30, inclusive, in any year..... $\frac{1}{2}$ ct. per lb.

Other $\frac{1}{4}$ ct. per lb.

This information indicates the efforts which were made to maintain stability in the rates of duty negotiated at Geneva, Annecy and Torquay. They are not only a part of the Canadian tariff, they are a part of an international tariff schedule. Canada and the 34 other countries entered into a contract through GATT not to increase the scheduled rates of duty on the 58,000 items of trade. In listing the rates in the schedule each country confirmed the principle that the tariff would be the only form of protection to producers.

This was done because it was decided by the countries represented at Geneva that it was mutually advantageous to have stability in tariffs.

As an exporting country it is in the Canadian interest to have stability in foreign tariffs.

Canada's most important tariff negotiations were of course with the United States because each is the other's biggest trading partner. In fact over half of Canada's total exports find a market in the United States and nearly three-quarters of her total imports come from the United States.

In 1952 Canada bought goods from the United States valued at \$2.9 billion and sold goods to the U.S. valued at \$2.3 billion. This exchange resulted in a deficit in the balance of trade account with the U.S. of \$600 million in the year.

Canadians hear a great deal about the uncertainty of the U.S. market and fear that they are becoming too dependent on that market for their exports. Canadian exports go to the market which returns the best price. While it is necessary to do everything that can be done to preserve old markets and find new ones it is doubtful whether any one would suggest that Canadian exports to the United States be deliberately cut.

On the import side Canadians are free to purchase where they please. The thing that cannot be overlooked is that Canadians choose to buy large quantities of U.S. goods. If foreign suppliers can supply, at competitive prices, the kind of goods which Canadians wish to buy they have great opportunities to expand their share of the Canadian market.

When the 23 countries opened tariff and trade negotiations at Geneva in May 1947 it was agreed that they would start negotiating from rates of duty which existed in April 1, 1947. This was the base date for tariff negotiations.

On April 1, 1947, the Canada tariff admitted potatoes free of duty except for six weeks in the year, June 15 to July 31, when a duty of 37½ cents per cwt. was imposed on table potatoes. At Geneva this rate was bound against increase.

On April 1, 1947 the United States full duty rate the year round was 75 cents per cwt. At that time they admitted an annual quota of one million bushels of table potatoes and 1½ million bushels of certified seed potatoes at one-half the full duty or 37½ cents per cwt. At Geneva the U.S. increased the quota at the reduced rate of duty on seed potatoes to 2½ million bushels.

It is difficult to explain the reasons for the disparity in the duty on potatoes. Historically Canada has admitted potatoes free of duty. They were free in 1906 and with some changes through the years they have remained practically free.

Traditionally the United States has had a relatively high tariff on potatoes.

In spite of the disparity in tariffs Canada's exports of potatoes to the United States have been in excess of our imports from that country.

During the ten years 1944 to 1953 inclusive Canada exported a total of 49 million bushels (seed 30 and table stock 19 million) to the United States with an export value of \$60 million. For the same period Canadian imports from the United States were 19 million bushels of potatoes with an import value of \$31 million. Since 1950 when price support on potatoes in the United States was lifted an approximate balance between exports and imports has been restored. In the three years 1951 to 1953 total exports of potatoes to the United States amounted to nine million bushels valued at \$14 million and imports in the same period totalled seven million bushels valued at \$14 million.

The United States is an important market for Canadian potato growers and efforts should be directed to gaining freer access to this market.

At every meeting with the United States the Canadian negotiators pressed for better tariff treatment from the U.S. on potatoes. U.S. rates seem unreasonable when compared with Canadian rates. However, the U.S. think that some of the Canadian rates on fruits and vegetables are unreasonable in relation to their tariff. In the Canadian marketing season the level of protection for peach growers in Canada is three times as high as U.S. The Canadian rate on cherries is four times the U.S. rate, pears and plums double, and for strawberries our duty is three times the U.S. duty. The U.S. have accepted the principle of seasonal specific duties for fresh fruits and vegetables in the Canadian tariff but they think the disparity in the levels of protection in favour of Canada is still pretty wide in some cases.

On April 1, 1947 the Canadian duty on fresh apples was 40 cents per bushel compared with the United States duty of 15 cents per bushel. On that date Canadian apples had free entry into the U.K. market while U.S. apples paid a duty of about 26 cents per bushel to the United Kingdom.

At Geneva in 1947 Canada agreed to a reduction in the duty on apples from ⅔ cents per lb. or 40 cents per bushel to ⅓ cents per lb. or 37½ cents per bushel.

At Geneva in the tariff negotiations the United States reduced its import duty on apples from 15 cents to 12½ cents per bushel.

At Geneva in 1947 Canada and the United Kingdom agreed to relinquish the preference on apples and remove the tariff discrimination against U.S. and European apples. If and when the restrictions on the imports of apples into the United Kingdom market are lifted, apples from all countries will enter the U.K. market free of duty between August 16 and April 15.

The United States placed a high value on a concession for apples and was prepared to pay handsomely to get it. The three way agreement on apples which emerged from Geneva seems to have been mutually advantageous. In the exchange Britain gained by obtaining important tariff reductions from the United States. Canada gained in the same way. The U.S. gained by prospects for widening the market for their apples.

Apples contributed a good deal to the conclusion of a satisfactory overall agreement between Canada, the United States and the United Kingdom at Geneva.

When Canada started trade negotiations at Torquay in September 1950 the Canadian import duty on fresh apples was $\frac{3}{4}$ cents per lb. or $37\frac{1}{2}$ cents per bushel. This was three times the United States duty of $12\frac{1}{2}$ cents per bushel. To the United States this disparity seemed unwarranted and from statements in the press the U.S. administration was under strong pressure from the U.S. apple industry to have the disparity in the protection entirely removed by a reduction in the Canadian duty or by more protection to U.S. growers. Without going into detail, it may be said that the negotiations on apples were prolonged and difficult. When trade negotiations ended at Torquay in April 1951 the Canadian duty stood at $\frac{3}{4}$ cents per pound or $18\frac{3}{4}$ cents per bushel in the main marketing season and the U.S. duty was bound against increase at $12\frac{1}{2}$ cents per bushel.

Apple growers were disappointed with the loss of the British preference in the United Kingdom market. However it was realized even at Geneva in 1947 that due to the emerging U.K. balance of payments difficulties that market would not be open to Canadian apple growers for some years. For that reason it was more important than ever before to have as free access as possible to the U.S. market. To hold that position, it was necessary to make some concession on apples.

Looking at all these considerations it is to be hoped and expected that the apple growers also regard these policy decisions as reasonable and justifiable.

Okanagan apples should be able to meet competition anywhere in the world if markets are open on a freely competitive basis. Open markets and non-discriminatory treatment are among the principles and purposes behind trade negotiations under the General Agreement on Tariffs and Trade. It is felt that Canadian apple growers improved their competitive position in international trade when the British preference for apples was surrendered. The U.S. market has been kept open and Canadian producers have sold one to two million bushels there annually valued at \$3 to \$5 million.

Some people have misgivings about the United States market due to the competitive nature of production in U.S. and Canada.

It is true that Canada and the United States produce a number of the same farm products. But products of high quality sold at competitive prices will normally enter either market and any market. Trade figures show that Okanagan apples are moving to 30 or 40 of the states in the United States. British Columbia apples are an outstanding example of where quality and good merchandising can carry a product and its producers.

Reference is frequently made to the lack of balance in the trade in fruits and vegetables between Canada and the United States. In 1952 Canada imported from the United States fruits and vegetables, and fruit and vegetable products valued at approximately \$100 million. Canada exported to the United States in the same period approximately \$20 million of fruits and vegetables. The ratio is about five to one in favour of the United States.

All fruits are competitive but for the purpose of the comparison which follows, citrus fruit, grapes and canned and frozen fruits and vegetables have been eliminated. This elimination reduces the value of imports of fresh fruits and vegetables of a kind grown in Canada to about \$50 million compared with our exports of \$20 million.

Canada imports fresh fruits and vegetables from the U.S. the year round. Even in their own marketing season Canadians continue to buy some fruits and vegetables imported from the United States. In fact in the last three years about 43 per cent of the total imports of competitive fresh fruits entered during the Canadian marketing season. About 30 per cent of directly competitive fresh vegetable imports entered Canada in her marketing season.

A comparison of the balance of trade with the U.S. in directly competitive fresh fruits and vegetables in the Canadian marketing season indicates that trade is about equalized at \$15 to \$20 million annually each way.

The U.S. tariff negotiations were carried out under the authority of the Reciprocal Trade Agreements Act. Under this Act the President has the power to make reductions of 50 per cent in the rates of duty which existed on January 1, 1945.

Under GATT 79 items in the U.S. fruit and vegetable tariff of interest to Canada were negotiated with the United States.

On 43, or over half of the items negotiated, the U.S. granted the full 50 per cent reduction. On 22 items out of the 79 there was a partial reduction and 14 items were bound against increase in the rates of duty.

The volume of most Canadian farm products exported to the United States is small in relation to United States production and has practically no influence on the market price in that country. That being the case the full value of reductions in the U.S. tariff is for the most part reflected in higher returns to Canadian exporters and producers. In the case of apples the $2\frac{1}{2}$ cents reduction in the U.S. tariff means that the Canadian apple producer is getting $2\frac{1}{2}$ cents more out of the U.S. consumers' dollar. In other words the $2\frac{1}{2}$ cents which before Geneva went into the U.S. treasury now returns to the pockets of Canadian apple growers. Two and one-half cents per box may seem rather insignificant but in ten years at the rate of shipments since 1947 it amounts to close to half a million dollars. It means more gain to the producer than that. It means the lifting of the level of the Canadian whole apple price structure closer to the American level.

Canadians cannot escape the fact that for their surplus commodities the U.S. price level less the U.S. duty pretty well determines our price level. Therefore it is of great economic interest to Canadian producers to seek further reductions in the U.S. tariff. The Canadian trade negotiators are of course interested in obtaining tariff concessions in countries other than the United States in order to expand and diversify market outlets for Canadian farm products. The objective has always been, and continues to be, to open up new opportunities for trade.

On the import side the Canadian trade delegation's duty is to safeguard producers but at the same time to have regard for Canadian export interests, the interest of consumers and the national interest.

If a trade negotiation between two countries is going to produce a mutually advantageous arrangement there must be concessions on both sides of the table. One country cannot expect reductions in the tariff of another country without giving compensatory or balancing reductions in its own customs duties.

That is the situation which confronts the trade negotiator. He tries to get as much as he can and give as little as possible. But the representatives of the other country on the other side of the table have the same idea. In the end there must be compromise on both sides if there is going to be an agreement.

Trade means an exchange, a give and take. If nations are going to export they must import. It is important that Canadian imports be high in order that other countries may earn dollars with which to pay for our exportable products.

Foreign countries have placed restrictions on the importation of Canadian and United States goods, not because they do not want them but for the reason that the demand for these goods is greater than their supply of dollars. If the opportunities are provided for overseas countries to export more to North America and earn dollars, import restrictions would disappear and the market for Canadian and U.S. products would be widened greatly.

Canada is dependent in a very vital way on the export market to absorb many products which are produced far in excess of Canadian requirements, to maintain reasonable prices for our products and to maintain employment. It is in the export market that Canada sells the bulk of her wheat, pulp and paper, base metals, fishery products and many agricultural products in addition to wheat.

In fact about 25 per cent of Canada's national production is exported.

About 25 per cent of Canada's agricultural production is exported and about 25 per cent of our total exports are agricultural products.

That being the case it is in the Canadian interest to seek new opportunities to expand exports in foreign markets through the lowering of tariffs and other barriers to trade.

Now what of the future?

The Contracting Parties to the General Agreement met in Geneva in September 1953 to consider a renewal of the Agreement.

The Minister of Trade and Commerce, flew to Geneva to participate in the meeting. In his statement before the Contracting Parties he said:

Our main task at this session is to ensure continued progress in the development of mutually advantageous trade among the nations of the world. I sincerely trust that we shall not be diverted from this task by other matters, which however important they may be, are subsidiary to the main purpose. I would go further and express the hope that our deliberations will be inspired by a measure of that spirit of urgency and enthusiasm which gave birth to this great experiment in multilateral trading relationships.

While we all know that the GATT is an imperfect document, that improvement is possible and we all hope that steps towards improvement will not be too long delayed, I am convinced that, without the General Agreement, the dislocations resulting from the Second World War would have been much more persistent. I believe that all those associated with bringing the General Agreement into being must feel a sense of satisfaction in the accomplishments to date.

At this Geneva meeting the Contracting Parties agreed to a renewal of the General Agreement on Tariffs and Trade and a firm binding of tariff concessions previously negotiated for 18 months up to July 1, 1955. Arrangements were made for a comprehensive review of the General Agreement which has been tentatively scheduled to begin in October 1954.

Many people believe that the progress which has been made under the General Agreement on Tariffs and Trade overshadows all other developments in international trade in recent years. The General Agreement charts the present course of Canadian commercial policy and may be a guiding influence in our international trade relations for years to come.

THE SHEEP ENTERPRISE IN NOVA SCOTIA

G. C. RETSON and V. A. HEIGHTON

During 1952 the Economics Division conducted a study of sheep production in the Atlantic Provinces. A previous article¹ based on this study dealt with the reduction in sheep numbers during the past 80 years and some of the major factors responsible for this decline. The following data, secured through a project in co-operation with the Nova Scotia Department of Agriculture and Marketing, provide information on returns from the sheep enterprise and the influence which various factors of management have on these returns. The sheep flocks studied in Nova Scotia were scattered throughout the province with the heaviest concentration in the Eastern Counties. The business year covered in the study was the 12-month period ending October 31, 1952.

The main consideration in any farm enterprise is the financial return which it will provide to the operator. This necessitates an analysis of the receipts and expenses associated with the operation of the enterprise and the calculation of the net return.

Receipts included sales of sheep, lambs, and wool, and a credit for inventory increase and home-used wool or meat. Sale of lambs was the most important item, accounting for 69 per cent of the total receipts.

Table 1.—Financial Summary of the Sheep Enterprise, 99 Flocks, Nova Scotia, 1952

	Per Farm	Per Ewe
	—dollars—	
Receipts.....	472.42	15.91
Expenses.....	238.86	8.04
Labour Returns.....	233.56	7.87
Hours of Labour.....	170.40	5.70
Labour Returns per Hour.....	1.37	—

¹ See "Decline of Sheep Production in the Maritime Provinces" on pages 128-9 of the December 1953 issue of *The Economic Annalist*.

Table 2.—Relation of Number of Lambs per Ewe Raised to Market Age to Returns, 99 Sheep Flocks, Nova Scotia, 1952

Number of Lambs Raised per Ewe		Flocks	Ewes per Flock	Labour Returns per Ewe	Labour Returns per Hour
Range	Average				
		—number—		—dollars—	
Less than 0.8.....	0.6	27	34.7	2.58	0.53
0.8—1.0.....	0.9	45	31.2	8.60	1.51
More than 1.0.....	1.3	27	22.2	14.41	2.00
Average.....	0.9	99	29.7	7.87	1.37

Expenditures included a charge for purchased and home-grown feed consumed by the flock and the cost of fencing and pasture maintenance. The cost of dip, dust, pills and other cash outlay associated with production and marketing of the flock were included, as were non-cash items such as use of buildings and equipment and inventory decrease. Receipts less expenses averaged \$7.87 per ewe. As no charge had been deducted for labour, this amount represented the return per ewe for time spent in caring for the flock. As labour averaged 5.7 hours per ewe, the farmer received a labour return of \$1.37 per hour.

But labour returns varied widely from farm to farm, reflecting differences in production practices and the operators' over-all ability in the management of the enterprise. An analysis of this variation provides a basis for evaluating various factors of management and their influence on returns.

Lambs per Ewe.—As the number of lambs per ewe, raised to market age, has a direct bearing on returns, this is often used as a measure of flock management. Data secured through the study indicated that higher returns were obtained from flocks which had a larger average number of lambs per ewe.

One of the most frequent criticisms of sheep management concerns the tendency to minimize the amount of care and time spent on the flock. Sheep will get by with relatively little attention, and there is a tendency to let them fend for themselves. How much time and expense can be profitably devoted to the sheep flock is a question to which the study did not provide a specific answer; the data, however, indicated that increased attention to the flock was associated with a larger lamb crop and higher labour returns per ewe and per hour.

Farmers raising most lambs per ewe fed the most concentrates, had higher charges for pasture, purchased more salt and mineral, and spent more for treatment of parasites than those with fewer lambs per ewe (Table 3). Farmers raising most lambs per ewe also spent much more time on their flocks. Returns per hour ranged from \$0.53 for the group of farms with an average of 0.6 lamb per ewe to \$2.00 for the group with an average of 1.3 lambs per ewe (Table 2). Sheep men were thus well compensated for the additional time and expense spent on their flocks.

Management of the sheep flock includes a number of practices such as breeding, feeding and parasite control; these influence the size of the returns which may be secured from a sheep enterprise.

As may be expected, lower mortality rates, a smaller number of barren ewes and a higher percentage of multiple births, were associated with a larger number of lambs raised per ewe. Better management was also reflected in higher prices received per lamb.

Table 3.—Number of Lambs Raised per Ewe in Relation to Certain Input Factors, 99 Sheep Flocks, Nova Scotia, 1952

Lambs Raised per Ewe	Pasture Cost per Ewe	Concentrates per Ewe	Salt and Mineral per Ewe	Parasite Treatment per Ewe	Annual Labour Hours per Ewe
number	dollars	pounds	—cents—		hours
Less than 0.8.....	1.15	24	7	16	4.9
0.8—1.0.....	1.24	42	8	19	5.7
More than 1.0.....	1.61	53	10	20	7.2
Average.....	1.29	39	8	18	5.7

Table 4.—Influence of Number of Ewes and its Relation to Success in Management, 99 Sheep Flocks, Nova Scotia, 1952

Number of Ewes		Flocks	Lambs Raised per Ewe	Labour Hours per Ewe	Pasture Cost per Ewe	Labour Returns per Hour
Range	Average					
		—number—		hours	—dollars—	
Less than 21.....	16.3	33	1.0	8.5	1.66	.95
21—29.....	24.5	33	0.9	6.9	1.52	1.32
More than 29.....	48.1	33	0.8	4.2	1.04	1.70
Average.....	29.7	99	0.9	5.7	1.29	1.37

Size of Flock.—A comment frequently made on the sheep enterprise in Nova Scotia is that flocks are, in many cases, too small for efficient production. The small flock contributes only a few dollars to farm revenue and often receives scant attention. Because of difficulties in fencing, it may eventually be classed as a nuisance and done away with altogether.

Flocks included in the study ranged from a low of nine to a high of 150 ewes per farm. Within this range there was some indication (as measured by lambs raised per ewe) that the management of some of the smaller flocks was better than that of the larger flocks. The larger flocks, however, were much more efficient in use of capital and labour and provided a higher return for time spent on the enterprise.

An increase in the size of a flock usually results in lower costs of production per unit, and this is one of the main advantages of the large over the small sheep enterprise. This is well illustrated by the data in Table 5, which indicate that a marked reduction in labour and pasture costs per ewe was associated with an increase in the size of flocks. Larger flocks would probably also encourage more definite breeding programs; lack of these have handicapped sheep in their competition with other enterprises.

Losses.—The 99 flocks lost a total of 232 sheep and 470 lambs during 1952. This represented a loss of eight per cent of the sheep flock and of 16 per cent of the lambs born during the year.

There were serious losses to predatory animals on some farms but, on the average, these losses did not constitute a major factor in flock mortality. The 99 flocks lost a total of 40 sheep and 53 lambs; or an average of about one sheep or lamb per flock to predatory animals. Sixty-five per cent of all lamb losses occurred at, or shortly after, birth. Losses to predatory animals were thus a minor factor when compared to losses more directly attributable to management.

The average flock comprised about 30 ewes; about four of these ewes lost their lambs and about six were barren. These included ewe lambs which were usually allowed to run with the breeding flock. A total of about nine ewes or nearly one-third of the flock were thus kept for a crop of wool only.

Table 5.—Losses of Sheep and Lambs, According to Causes, 99 Flocks, Nova Scotia, 1952

Cause	Sheep		Lambs	
	number	per cent	number	per cent
Lost or Stolen.....	7	3	16	3
Bears and Foxes.....	5	2	25	5
Dogs.....	35	15	28	6
Diseases.....	38	17	30	7
Accidents.....	76	33	37	8
Lost at Birth.....	—	—	306	65
Old Age.....	38	16	—	—
Other.....	33	14	28	6
Total.....	232	100	470	100

Breed.—Only one pure-bred flock was included in the study; the others were grade flocks with Oxford the predominant breed, followed by Shropshire and Cheviot. There was some variation among breeds, in the number of lambs born and raised per ewe. It must be added, though, that the size of the sample was probably too small to reveal any existing differences among breeds.

Farmers received an average price of \$16.41 per lamb and 38 cents per pound of wool and, as previously indicated, net returns for time spent on the enterprise averaged \$7.87 per ewe. Sheep men appeared to be optimistic about the future and this optimism was evidenced by an increase of 32 per cent in the number of lambs carried over for breeding purposes. For an enterprise which has been characterized by a sharp decline over the past 80 years an increase in numbers is of real significance.

Returns, at the 1952 level, were sufficient to check the decline in sheep numbers. With a current trend toward a lower level of farm prices it appears that maintenance of returns of the 1952 level will depend largely on the individual farm operator's ability to cut production costs.

But, can the individual farmer reduce his operation costs? The findings made during the study suggest an affirmative answer to this question. Differences in prices received for lambs and wool accounted for some of the variations in returns from flock to flock. The widest variations, however, were due mainly to differences in production costs. The experience of the more successful farmers indicates that competent and skilful management in the handling of a large flock usually succeeds in reducing costs, maintaining, and even increasing returns.

PUBLICATIONS OF THE ECONOMICS DIVISION

Farm Practices in the Weyburn Loam and Regina Heavy Clay Soils of Saskatchewan. *Ragush, M. and F. F. Cline.* Economics Div. in co-operation with Dept. of Farm Management, University of Saskatchewan. Processed bul. Ottawa, September 1953. pp. ii + 27.

A study concerned primarily with those features of farm organization and farm practices which affect the productive capacity of the farms on the Regina heavy clay and on the Weyburn loam soils.

The specific purposes of the study were to compare the patterns of land use, the farm practices and the relationship between farm practices and farm production on these two types of soils.

An Economic Classification of Land and a Study of Farm Organization of the Biggar-Kerrobert-Unity Area, Saskatchewan, 1948. *Zeman, J.* Ottawa, October 1953. pp. ii + 20 + maps.

This study is a continuation of the program of land classification initiated in 1935 in South Central Saskatchewan. The author describes the *General Characteristics of the Area* and discusses problems relating to the *Economic Classification of the Land and Farm Organization*.

A Farm Business Study in the Birtle-Shoal Lake Area of Manitoba. *Riecken, T. O.* Economics Div. in co-operation with the Dept. of Political Economy, University of Manitoba. Ottawa, November 1953. pp. 31.

A study designed to provide information on land resources and land use problems in the Birtle-Shoal Lake area of Manitoba. The report includes sections on : *General Characteristics of the Area; Farm Organization; and Factors Affecting Farm Success.*

A Study of Changes in the Farm Business in the Athabaska Area of Northern Alberta, 1945-51. *Elgaard, K.* Ottawa. December 1953. pp. 34.

As stated in the Introduction, "This study is an extension of a series of economic investigations dealing with land settlement problems in the woodland areas of Alberta". It deals with the *Changes in Farm Organization and the Financial Changes*, i.e., changes in farm receipts, farm expenses and net worth, which have taken place on 37 farms in the Athabaska area from 1945 to 1951; it also includes *An Economic Analysis of the Farm Business* for the years 1944 and 1950.

THE ECONOMIC ANNALIST

A BIMONTHLY REVIEW OF AGRICULTURAL BUSINESS

G. P. BOUCHER, Editor

JUNE 1954

Vol. XXIV, No. 3

CONTENTS

	Page
The Economic Situation.....	51
Financing Farming in Canada..... <i>S. C. Hudson</i>	53
Crop Labour Requirements in the South-Central Red River Valley of Manitoba..... <i>J. G. MacKenzie</i>	58
Labour Requirements for Dairy Barn Chores... <i>J. M. Fitzpatrick</i>	62
Publications of the Economics Division.....	69
United Nations Publications.....	70
Other Publications.....	71

MARKETING SERVICE, ECONOMICS DIVISION

J. F. BOOTH, Chief

Published by Authority of the Right Honourable James G. Gardiner
Minister of Agriculture

ANNUAL AND MONTHLY INDEX NUMBERS

WHOLESALE PRICES, FARM PRICES AND LIVING COST INDEXES

Year	Wholesale Prices 1935-1939=100				Farm Prices of Agricultural Products 1935-39 =100 (e)	Commodities and Services used by Farmers 1935-39=100		Cost of Living 1935-39=100		Consumer Price Index (1949 =100) (j)
	(a) General Wholesale Index	(b) Farm Products	(c) Field Products	(d) Animal Products		(f) Equipment and Materials	(g) Eleven Factor Index	(h) Farm Living Costs	(i) Urban Living Costs	
1913.....	83.4					85.4		80.1	79.1	49.2
1914.....	85.4					90.2	85.3	82.3	79.7	49.6
1915.....	91.8					96.9	91.6	86.5	80.7	50.3
1916.....	109.8					101.7	100.5	93.7	87.0	54.2
1917.....	148.9					140.7	140.5	111.5	102.4	63.7
1918.....	166.0					164.1	160.2	131.1	115.6	72.0
1919.....	174.7					169.1	167.9	143.0	126.5	78.8
1920.....	203.2					190.1	186.5	171.3	145.4	90.5
1921.....	143.4					147.4	152.5	139.9	129.9	80.9
1922.....	126.8					124.6	134.1	127.9	120.4	74.9
1923.....	127.7					118.3	130.6	128.3	120.7	75.2
1924.....	129.5					122.3	131.9	125.5	118.8	74.0
1925.....	133.8					123.2	131.8	123.9	119.8	74.6
1926.....	130.3	144.4	158.5	130.2		119.9	130.6	121.1	121.8	75.9
1927.....	127.3	138.6	149.4	127.8		119.9	131.2	119.8	119.9	74.6
1928.....	125.6	136.3	134.3	138.2		118.3	129.3	118.5	120.5	75.0
1929.....	124.6	140.8	137.2	144.4		117.6	127.9	117.3	121.7	75.8
1930.....	112.9	119.5	105.8	133.3		105.6	117.0	113.7	120.8	75.3
1931.....	94.0	78.9	65.0	92.7		92.2	100.9	103.9	109.1	67.9
1932.....	86.9	65.5	60.4	70.5		89.3	93.3	97.8	99.0	61.7
1933.....	87.4	69.3	69.3	69.2		88.8	89.8	95.8	94.4	58.8
1934.....	93.4	83.5	80.5	86.5		96.8	95.5	97.9	95.6	59.6
1935.....	94.4	89.2	84.4	94.1	88.0	95.6	95.4	97.9	96.2	59.9
1936.....	96.7	97.9	102.2	93.7	96.9	98.7	98.1	98.3	98.1	61.1
1937.....	107.8	117.4	128.9	106.0	119.7	108.4	105.3	102.9	101.2	63.0
1938.....	102.0	102.9	100.9	104.8	105.0	101.2	101.7	101.9	102.2	63.7
1939.....	99.2	92.6	83.7	101.5	91.8	95.7	99.3	99.5	101.5	63.2
1940.....	108.0	96.1	85.4	106.7	96.8	101.8	106.8	108.5	105.6	65.7
1941.....	116.4	106.6	88.9	124.4	110.2	107.8	116.1	114.1	111.7	69.6
1942.....	123.0	127.1	109.7	144.6	133.1	119.2	131.6	119.0	117.0	72.9
1943.....	127.9	145.4	129.0	161.8	157.8	122.4	143.4	121.7	118.4	74.2
1944.....	130.6	155.3	144.5	166.1	172.4	126.0	148.0	122.8	118.9	74.6
1945.....	132.1	166.4	162.5	170.2	185.7	125.9	152.1	123.2	119.5	75.0
1946.....	138.9	179.5	177.9	181.2	204.1	128.0	157.0	127.1	123.6	77.5
1947.....	163.3	192.2	184.1	200.2	215.8	139.5	170.4	138.3	135.5	84.8
1948.....	193.4	232.1	200.6	263.7	255.8	173.1	197.4	162.8	155.0	97.0
1949.....	198.3	228.7	191.9	265.4	255.4	180.3	204.1	173.2	160.8	100.0
1950.....	211.2	236.7	191.9	281.4	260.8	189.9	210.4	177.6	166.5	102.9
1951.....	240.2	268.6	200.4	336.9	296.8	206.0	230.0	198.6	184.5	113.7
1952.....	226.0	249.0	220.5	277.5	274.5	215.8	243.1	210.0	187.5	116.5
1953.....	220.7	219.5	175.1	263.8	247.6	207.4	239.8	203.6	.....	115.5
1953										
Aug.....	222.2	213.6	157.2	269.9	240.3	206.3	243.6	204.9	186.4	115.7
Sept.....	221.2	208.9	154.0	263.7	235.6	.....	.....	.....	186.3	116.2
Oct.....	220.4	208.5	151.7	265.3	235.8	.....	.....	.....	.....	116.7
Nov.....	218.7	204.9	151.7	258.0	229.0	.....	.....	.....	.....	116.2
Dec.....	219.0	206.8	151.9	261.6	229.5	.....	.....	.....	.....	115.8
1954										
Jan.....	219.8	209.4	152.5	266.3	233.1	204.0	231.1	204.8	.....	115.7
Feb.....	219.0	208.8	152.9	264.7	233.8	.....	.....	.....	.....	115.7
Mar.....	218.6	206.7	151.3	262.0	232.5	.....	.....	.....	.....	115.5
Apr.....	217.9	205.5	150.6	260.4	.....	.....	.....	.....	.....	115.6
May.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

(a) Canada. Dominion Bureau of Statistics, Labour and Prices Division. *Prices and Price Indexes*. (Mimeo.) Ottawa, Monthly.

(b) Ibid. (a). Wholesale prices of products of Canadian farms.

(c) Ibid. (a). Wholesale prices of grains, hay, tobacco and potatoes.

(d) Ibid. (a). Wholesale prices of animals and animal products.

(e) Canada. Dominion Bureau of Statistics, Agriculture Division. *Index Numbers of Farm Prices of Agricultural Products*. (Mimeo.) Ottawa, Monthly.

(f) Canada. Dominion Bureau of Statistics, Labour and Prices Division. *Price Index Numbers of Commodities and Services Used by Farmers*. (Mimeo.) Ottawa, Jan., Apr. and Aug. Includes prices of commodities in 8 groups including farm implements, building materials, gasoline, oil and grease, feed, fertilizer, binder twine, seed and hardware.

(g) Ibid. (f). Includes the 8 commodities indicated above plus tax rates, interest rates and farm wage rates.

(h) *Price Index Numbers of Commodities and Services used by Farmers*. Includes food, clothing, fuel, household equipment, health, maintenance and miscellaneous.

(i) *Prices and Price Indexes*. Includes food, rent, fuel and lighting, clothing, home furnishings and services, miscellaneous and retail prices of commodities.

(j) Canada. Dominion Bureau of Statistics, Labour and Prices Division. *Price Movements*. (Mimeo.) Ottawa, Monthly.

THE ECONOMIC SITUATION

Export Trade.—Canada's domestic exports in March were a little higher than in March 1953 mainly because of an important gain in shipments to the United Kingdom. Exports to other Commonwealth countries, the United States, Latin America and European countries were slightly lower but exports to other foreign countries were higher. Total shipments were well above those of February, in value. Successive advances recorded during the first quarter of the year in sales to the United Kingdom, the United States and Latin America outweighed declines to Europe and other foreign countries.

Domestic exports to all countries in March were valued at \$315.7 million compared with \$307.8 million in March 1953. This increase was the result of a larger volume of exports; prices averaged about three per cent lower. This small increase, however, was not enough to offset the large decline in January; the value of shipments to all countries in the first quarter of the year declined to \$851 million from \$900.6 million in the first quarter of 1953. The volume and value of exports were 3.4 and 5.5 per cent lower respectively.

Domestic exports to the United States declined from \$202.4 million in March 1953 to \$200.8 million in March this year, and totals for the first quarter of the year from \$564.3 million in 1953 to \$526.5 million in 1954. Domestic exports to the United Kingdom rose from \$38.5 million in March 1953 to \$52.3 million in March 1954, and from \$123.9 million in the first quarter of 1953 to \$134.7 million in the first quarter of 1954. Exports to other Commonwealth countries declined from \$16.5 million in March 1953 to \$13.4 million in March 1954 and from \$55.8 million the first quarter of 1953 to 37.3 million in the first quarter of 1954.

Industrial Employment.—The advance index of industrial employment (1949=100) stood at 106.5 on March 1 compared with 107.0 on February 1 and 110.0 on March 1, 1953. The pay-rolls index was 147.5 compared with 146.2 at the beginning of February and 147.0 on March 1, 1953.

Wages.—Average weekly wages in Canadian manufacturing industries rose from \$56.58 at the beginning of March 1953 to \$57.69 at the beginning of March this year.

Retail and Department Store Sales.—

Retail sales in Canada in the first quarter of 1954 totalled \$2,543 million or 1.2 per cent less than the \$2,574 million sales in the first quarter of 1953. Retail sales in March 1954, however, increased to \$934.8 million from \$931.5 million in 1953. The gain realized in March occurred only in three areas: Quebec, 0.5 per cent; Manitoba, 4.9 per cent; and British Columbia, 14.9 per cent. The comparatively large increase in British Columbia was probably related to the announcement made by the Government of British Columbia that the provincial sales tax would be increased from three to five per cent from April 1. Declines in retail sales in March ranged from 0.1 per cent in the Atlantic provinces to 3.1 per cent in Ontario.

Department store sales rose 7.9 per cent in April compared with April 1953. Sales were up 4.1 per cent in the Maritime Provinces, 12.8 per cent in Quebec, 11.6 per cent in Ontario, 5.9 per cent in Alberta and 10.8 per cent in British Columbia, but down 1.3 per cent in Manitoba and 7.6 per cent in Saskatchewan.

In the first quarter of 1954 department store sales increased to \$209.2 million from \$207.5 million in the first quarter of 1953.

Consumer Price Index.—The consumer price index registered a slight gain, rising from 115.5 to 115.6 between March 1 and April 1, mainly because of advances in clothing, household operation and other commodities and services which outweighed declines in food prices. The food index moved down from 110.7 to 110.4 and reflected declines in the prices of eggs, butter, beef, fresh pork, veal, fresh tomatoes, celery and potatoes; these declines were more important than the increases for coffee, tea, oranges, cured pork and shortening.

Wholesale Prices.—Canada's general wholesale price index continued to decline; from 221.9 in March 1953 it dropped to 219.0 in February and 218.6 in March 1954. This was the lowest point recorded since August 1950.

Animal products experienced the most substantial decline, the index for this group moving to 242.1 from 243.9 in February, mostly as a result of lower prices of livestock, fresh meats, butter, cheese, eggs and hides. Cured meats was the only sub-group to show an advance.

Vegetable products declined from 200.6 to 199.6; decreases in grains, vegetable oils, sugar, milled cereal foods, feeds, potatoes, onions and canned vegetables outweighed continued increases in coffee, cocoa, tea, rubber, footwear and fresh and canned fruits. Lower prices for domestic and imported raw wool and raw cotton caused a drop from 233.3 to 233.1 in the index for fibres, textiles and textile products.

Farm Prices.—Canada's farm price index of agricultural products followed an upward trend from November 1953 to February 1954 but declined from 233.8 for that month to 232.5 for March. This decline was the result of generally lower prices for livestock, dairy products, potatoes and poultry and eggs.

The composite index of Canadian farm product prices at terminal markets receded from 208.8 to 206.7. Field products declined from 152.9 to 151.3 mainly because of lower prices for eastern potatoes and eastern grains. The animal products index also declined; it moved from 264.7 to 262.0 following lower quotations for livestock, eggs, eastern milk for cheese manufacture, and raw wool.

Dairy Products and Margarine.—Stocks of creamery butter rose from 27 million to 42.4 million pounds but holdings of cheddar cheese declined from 25.5 million to 22.3 million pounds from May 1, 1953 to May 1, 1954. Evaporated milk stocks dropped from 26.3 million to 18.7 million pounds and stocks of skim milk powder from 12.1 million to 7.4 million pounds.

Production of creamery butter increased from 22.4 million pounds in April 1953 to 24 million pounds in April 1954 and the total for the first four months of the year from 56.3 million to 59.6 million pounds. Domestic disappearance rose from 22.2 million pounds in April last year to 23.6 million pounds in April this year and from 83.5 million pounds in the January-April period of 1953 to 88.3 million pounds in the corresponding period of 1954.

The production of cheddar cheese totalled 4.4 million pounds in April 1954 compared with 5.4 million pounds in April 1953 and 11 million pounds in the

first four months of 1954 compared with 12 million pounds in the first four months of 1953.

Production of process cheese increased from three million pounds in April 1953 to 3.8 million pounds in April 1954 and the total for the first four months of the year from 14.6 million to 16.2 million pounds. Stocks in the hands of manufacturers rose from 1.5 million pounds at the end of April 1953 to 1.7 million pounds at the end of April 1954.

The output of ice cream totalled almost 2.1 million gallons in April 1954 compared with slightly more than 2.1 million gallons in April 1953 and 6.3 million gallons for the first four months of 1954 compared with 6.4 million gallons in the first four months of 1953. The output of concentrated milk declined from 39.4 million pounds in April 1954 to 39.1 million pounds in April 1953 but the January-April output rose from 101.7 million pounds in 1953 to 107.5 million pounds in 1954.

Margarine production increased from 8.5 million pounds in April 1953 to 9.5 million pounds in April this year and the total for the January-April period, from 36.3 million pounds in 1953 to 38.2 million pounds in 1954. Stocks held by manufacturers, wholesalers and other warehouses on May 1 rose from 3.1 million pounds in 1953 to 3.5 million pounds in 1954.

Wheat Stocks.—Stocks of Canadian wheat in store or in transit in North America on April 29 totalled 348.7 million bushels compared with 269.5 million bushels a year earlier.

Stocks of Meat.—Cold storage holdings of meat at the beginning of May totalled 75.8 million pounds, only a little less than the 74.8 million total at the beginning of April but considerably less than the 122.8 million pounds held at the beginning of May 1953. This important decline was the result mainly of a drop from 92.1 million to 46.1 million pounds in the holdings of frozen meat. Stocks of fresh meat increased from 17.1 million to 18.1 million pounds and those of cured meat declined from 13.6 million to 11.6 million pounds.

Corrigendum.—On page 34 (line 15) of the April 1954 issue, the total quantity of wheat transferred to the 1953-54 pool should read 148.7 million instead of 127.3 million bushels.

FINANCING FARMING IN CANADA¹

S. C. HUDSON

The problems pertaining to the supply of capital for agriculture are unique and therefore, justify special consideration and study. Unfortunately, one of the characteristics of the farm credit market is the scarcity of reliable statistical information to use as a basis for its description. Thus, some of the estimates made in attempting a description of this market may lack a valid statistical basis and be nothing more than personal opinions.

Although the main topic of discussion in this article is the farm credit market, it seems appropriate to deal first with the subject in terms of capital requirements in agriculture and to indicate the part which credit plays in the supplying of farm capital. Capital requirements are commonly thought of in terms of individual firms both for farming and for other industries. Farms are small enterprises in contrast to firms in industry and this often causes many to lose the proper perspective of aggregate farm credit and capital requirements in relation to those in other segments of the economy.

Capital Investment in Farms.—According to the 1951 Census, the aggregate capital investment in farms in Canada was \$9.5 billion. Of this amount \$5.5 billion was accounted for by land and buildings. Two billion dollars represented the investment in machinery and equipment and \$2 billion the value of the livestock. This capital which is provided from three sources, farm owner-operators, non-farming farm owners, and lenders, will be considered in two parts—capital invested in real estate and that invested in livestock and equipment. Considering first the sources of capital invested in farm real estate, it may be somewhat of a surprise to many that 25 per cent of the farm land in Canada is owned by individuals or corporations not actively engaged in farming but filling the role of landlords. As much of the rented land does not include buildings but includes some low-value government-owned pasture land, its value per acre would be somewhat lower than the value of the land owned by farm owner-operators. On the basis of a 25 per cent lower valuation for landlord-owned farms, it is estimated that landlords provide about \$1 billion of the total farm capital. In Eastern Canada this landlord capital comes almost entirely from farmers and other individuals. In the Prairie Provinces, however, information based on farm management surveys suggests that farmers and other individuals supply somewhat more than 50 per cent of the landlord capital as compared with 35 per cent from public funds and 10 per cent from corporations.

On the basis of the known volume of farm mortgage loans held by government agencies and commercial mortgage lending institutions, it would seem reasonable to estimate the value of mortgages on farms at the end of 1952 at about \$460 million.² Based on the Census valuation of \$5.5 billion for land and buildings, the equity of farm operators in their farm real estate would, therefore, be about \$4 billion or 73 per cent of the total value of land and buildings.

Of the \$4 billion of operating capital invested in livestock and equipment, some \$300 million is provided through bank loans. Taking into account the fact that many farmers still run a charge account with local dealers for feed, fertilizers, farm supplies and groceries, it is estimated that credit amounting to another \$300 million may be provided through short-term loans from individuals, credit unions and other sources. On the basis of these estimates the farm operator would hold an equity in his livestock and equipment amounting to \$3.4 billion or 85 per cent. Farm owner-operators, therefore, provide about 80 per cent of their aggregate capital requirements.

Sources of Farm Credit.—Farm credit is commonly classified according to the period of loans as long-term or mortgage credit—commonly five to 25 years; intermediate credit—one to five years, and short-term credit—three months to one year. The important sources of farm mortgage credit are government agencies, insurance, mortgage and loan corporations and individuals. On the basis of the Census and other surveys, it is estimated that for Canada as a whole nearly 50 per cent of the

¹ Based on a lecture in a series on "Institutions and Problems of the Capital Market in Canada," given at the University of Toronto, on February 8, 1954.

² For further information on farm mortgage credit see *The Canadian Mortgage Market*, by O. J. Firestone which is expected to be published shortly by the Toronto University Press.

farm mortgages are held by individuals, about 40 per cent by government institutions and ten per cent by corporate lenders. In the Prairie Provinces, however, corporate lenders are a much more important source of mortgage funds with the result that all three of the principal sources share more or less equally in the provision of mortgage funds in that area.

Although it is possible to obtain reasonably accurate information on the farm mortgage credit extended under government sponsorship and by corporations, estimates of mortgages held by individuals must be based largely on the residual. At the end of 1952, mortgages held by the Canadian Farm Loan Board amounted to about \$30 million. Mortgages or agreements of sale on full-time farms under the Veterans' Land Act amounted to \$90 million, almost half of which was in the form of conditional grants. Mortgages held by the Quebec Farm Credit Bureau on December 31, 1952, amounted to \$60 million. There were also a number of other provincial and municipal agencies holding farm mortgages amounting to \$20 million. Government farm mortgage agencies, therefore, had loans of about \$200 million outstanding at the end of 1952. The farm mortgage holdings of mortgage and insurance companies and credit unions at the same date are estimated at \$40 million. Individual mortgagees, many of whom are active or retired farmers, are estimated to hold farm mortgages to the value of about \$200 million.

As already mentioned, operational credit extended to Canadian farmers by the chartered banks during 1952 averaged about \$300 million. Of this amount \$123 million were loaned under the Farm Improvement Loans Act, usually for a period of more than one year and constituted, therefore, a form of intermediate-term credit. Operational credit extended by individuals and other institutions including merchants, tradesmen, personal finance companies and credit unions, has been estimated at \$300 million. The period of this type of credit varies according to the type of farming—from as little as 30 days for dairy farmers who receive their monthly milk cheque to as much as one to two years for cash crop and livestock farmers. It is not possible to make any breakdown based on the length of credit period; most of it would be extended for a term of less than one year and would, therefore, be classified as short-term.

Some Historical Developments.—The First World War and its requirements of increased food supplies coincides with, and provided the real stimulus to, the agricultural development of the Prairie Provinces. Wheat acreage increased from ten million to 22 million acres during the war period. This rapid expansion in agriculture created a great demand for credit which was met mostly by mortgage, loan and insurance companies, often at exorbitant rates of interest. In an attempt to remedy this situation provincial farm credit agencies were established in several provinces and were supplemented by the setting up of the Canadian Farm Loan Board in 1929. All of the provincial agencies later ceased operations, but Quebec entered and Ontario re-entered the farm credit field within recent years. This period of capital expansion continued until 1930 when, as a result of the drastic drop in farm income caused by a combination of poor yields and low prices, farmers found themselves unable to meet the fixed mortgage interest charges. To forestall widespread foreclosures and dispossession of farmers, the governments of the three Prairie Provinces enacted moratoria and debt adjustment legislation and through voluntary and compulsory arrangements, the debts of many farmers were scaled down and in some cases interest payments were put on a crop share basis. Although the debt adjustment legislation wrote off large amounts of what would undoubtedly have been uncollectable indebtedness, and avoided dispossessing thousands of farmers of their land, it has resulted in a very wary attitude on the part of corporate lenders to farm mortgage investment. There has been some corporate farm mortgage lending in Manitoba and Alberta during recent years; debt adjustment and farm security legislation remain in force in Saskatchewan but there has been no marked resumption of farm mortgage lending in that province.

Just as a combination of poor crops and low prices during the 1930's resulted in an accumulation of farm indebtedness, which included tax and interest arrears, good crops and favourable prices since 1940 have resulted in a liquidation of this indebtedness. Since 1937 the farm mortgage holdings of members of the Dominion Mortgage and Investments Association in the Prairie Provinces have fallen from nearly 57 thousand mortgages valued at \$180 million to 12 thousand valued at \$27 million. This represented a reduction in value of 83 per cent for Manitoba, 88 per

cent for Saskatchewan and 78 per cent for Alberta. Most of the decrease occurred between 1937 and 1947. The smaller reductions in Alberta and Manitoba were not the result of poorer repayments by Alberta and Manitoba farmers but rather of the larger amount of new money loaned in those provinces.

The movement of new capital into an industry is related to the economic situation within that industry as well as to the availability of capital goods. New investment in durable physical assets in agriculture decreased from \$121 million in 1929 to \$19.2 million in 1932. Although the flow of new investments into agriculture had recovered substantially by 1937, there was a shortage of materials during the war period and it was not till 1945 that the \$100 million mark was passed. As a result of expansion and cumulative replacement needs, new investment in agriculture during the past four years has been in excess of \$400 million.

Much of the new investment in agriculture and of the reduction in farm indebtedness has been from current earnings. However, there is also evidence of a substantial increase in the use of borrowed capital. The re-financing of farm investment as a result of the transfer of farms to new owners has contributed to this increase. The partial withdrawal of corporate lenders from the farm mortgage field and some substitution of bank loans under the Farm Improvement Loans Act for the financing of machinery and other purchases through dealers, have altered the institutional pattern of farm credit. Individuals have continued to be the most important source of farm mortgage credit, but government agencies have become more important as sources of borrowed funds. Banks also supply a greater part of the short- and intermediate-term credit.

Government-Sponsored Farm Credit.—The increasing importance of governmental agencies as suppliers of farm credit warrants at least a brief description.

The *Canadian Farm Loan Board* is a self-supporting Crown corporation established in 1929, after years of persistent demand, to administer a system of long-term mortgage credit for farmers. Loans may be made on first mortgages up to \$10 thousand or to \$12 thousand if a second mortgage is taken. Before 1952 the maximum size of loan was \$5 thousand on a first mortgage and \$6 thousand with both a first and second mortgage. Repayment may be amortized over 10, 15, 20 or 25 years. The Board obtains its funds from the sale of bonds to the Minister of Finance and charges interest on its sales to cover the cost of funds and operating expenses. At present the Board pays $3\frac{1}{2}$ per cent for its funds and charges five per cent interest on first mortgage loans and $5\frac{1}{2}$ per cent on second mortgages. The Board has followed a conservative policy in its lending operations. Although its losses have been negligible, the total amount of its loans is less than seven per cent of the total volume of farm mortgages.

The *Veterans' Land Act*, which was passed in 1942, is part of the rehabilitation legislation for veterans, designed to assist them in settling on full-time farms or part-time small holdings. A substantial part of the cost of each establishment is borne by the Federal Government. The Act provides for the purchase, on behalf of a veteran, of real estate, livestock and equipment up to a total value of \$6 thousand. The veteran is required to pay in advance ten per cent of the cost of the real estate and to contract to repay two-thirds of the amount advanced with interest at $3\frac{1}{2}$ per cent amortized over a period of up to 25 years. Of the \$6 thousand that may be paid on behalf of the veteran under this legislation, \$1,200 may be used for the purchase of chattels; these become the property of the veteran at the end of ten years. As at March 31, 1953, credit totalling \$205 million had been extended to veterans; of this, \$88 million was in the form of conditional grants. Credit extended on full-time farms amounted to \$96 million, of which \$54 million were conditional grants.

The *Farm Improvement Loans Act*, which came into force in 1945, provides chartered banks with a guarantee against loss up to ten per cent of the aggregate principal amount of loans made by each bank. Loans made may be for periods up to ten years depending on the amount borrowed and the purpose for which the loan is obtained. The maximum loan to one borrower which may be outstanding at any one time is \$3 thousand. Interest is payable at the rate of five per cent, simple interest. About 90 per cent of the loans made under the Act have been used for the purchase of farm implements. Other important purposes for which loans may be made include construction, repair or alteration of buildings, purchase of livestock, improvement or development of the farm, installation of equipment such as a farm

electric system, and construction of fencing or drainage. Most of the loans made under the Act have been for a period exceeding one year and, therefore, may be considered as intermediate-term credit. Up to the end of 1952 a total of 331,940 loans, amounting to over \$353 million had been made. The Farm Improvement Loans Act represents the most progressive step which has been taken in the past 20 years to adapt commercial credit to the needs of agriculture.

The Quebec Farm Credit Bureau, established under the authority of the Quebec Farm Credit Act of 1936, marked the entry of a provincial government into the farm mortgage field after the establishment of the Canadian Farm Loan Board. Before this Act was passed the Quebec Government subsidized interest payments on Canadian Farm Loan Board loans held by farmers within this province to bring the cost of interest down to three per cent. This policy was continued until 1951. Loans granted by the Quebec Farm Credit Bureau are personal mortgage loans. The character of the applicant, his civilian status and his farming ability and experience are given a rating equal to that of the security offered. First mortgage loans are made up to 65 per cent of the value of land and buildings. In cases where a farm is purchased by a young man starting farming as an owner-operator or where debts are consolidated by mutual agreement between debtors and creditors, the loan may represent up to 75 per cent of the value of the land and buildings. The maximum loan is \$6 thousand. Loans mature after 39½ years and bear interest at the rate of 2½ per cent. Part or all of the original loan may be repaid at any time.

The Junior Farmers' Establishment Loan Act was passed by the Ontario Government in 1952. Under this Act loans may be made to residents of Ontario between the ages of 21 and 35 years who have had a minimum of three years' experience in farming and have displayed the ability and capacity necessary to operate a farm. The maximum amount of loans is 80 per cent of the value of the property offered as security or \$15 thousand. Loans may be repaid on an amortization basis up to 20 years with interest at four per cent; on loans over 20 years and up to 25 years, 4½ per cent interest is charged.

Characteristics of Farming in Relation to Credit Requirements.—Credit requirements in farming are considerably different from those in other industries. Why do these differences exist and why does farming require credit machinery different from that of other industries. To answer this question it is necessary to examine some of the characteristics of farming and understand them before considering how credit institutions may be adapted to the needs of farmer borrowers.

Farms, for the most part, are small business units. Of the 623 thousand farms reported in the Census, 77 per cent had sales of farm products in 1950 averaging less than \$2,500 per farm. The remaining 23 per cent of these rural holdings accounted for over 63 per cent of the value of farm products reaching the market. We may regard this last group of farms as commercial units whereas the first and larger group might be considered small-scale or semi-commercial farms. The provision of credit on a commercial basis to these small units presents a difficult problem because of the lack, in many cases, of any margin of returns over farm operating and living expenses, to service debts. Even farms in the commercial group often experience difficulty in obtaining a sympathetic consideration of their individual credit requirements.

Farming is organized on a family basis and is carried on by individual farm operators. Farm businesses are not incorporated and, therefore, a particular business unit may die with the owner-operator. This usually means a refinancing of the farm business with each generation so that farms must go through recurring periods of indebtedness during which less than the optimum amount of capital for the efficient operation of the farm is available.

Farming is a "biological" industry; these processes of nature are of fixed duration. In the growing of cash crops capital inputs are required in the preparation of the seed bed one year in advance in the case of annual crops, two to three years in the case of biennials or perennials, and even ten years for orchards. In the livestock industry the production process may extend over periods of from eight months for poultry to three to four years for beef cattle. Before the passing of the Farm Improvement Loans Act, banks customarily made loans to farmers for a period of three months, after which time renewal or payment was necessary.

One of the characteristics of farming which greatly influences credit requirements is the instability of income. This instability arises out of variability of yield and price. Some areas in Western Canada, for example, have yields which vary as much as 80 per cent from year to year. Agricultural prices also are subject to greater variations than prices of other commodities. A particularly devastating situation occurs when low yields are accompanied by adverse price relationships. This situation occurred during the 1930's and gave rise to credit moratoria and compulsory debt adjustments.

Another feature of farming which is important in relation to credit is the difficulty in estimating the probable farm income. More information, in the form of soil maps, land classification maps and farm management studies is becoming available but the correlation of these data and their application to the situation on individual farms presents great difficulties to credit institutions. The cost of making such appraisals on widely scattered individual farm units is also high and places the farmer at a great disadvantage compared with urban businesses of similar size.

Great increases have occurred in farm capital requirements in recent years. Higher prices have contributed to this increase, but the basic cause is the rise in the size of farm units and greater mechanization. Livestock and machinery now account for about 40 per cent of the total capital investment on farms compared with about 25 per cent twenty years ago. The capital investment per farm unit has more than doubled during this period. It is, therefore, very difficult for a young man to become established on an economic farm unit.

Farmers cannot decrease their production on the basis of the market demand for their product in the same way as industrial concerns. The land must be managed properly or it will deteriorate, and producing herds which require years of careful selection cannot be liquidated at will. In periods of falling prices there is a tendency for farmers to attempt to maintain their income by increasing production.

It should be evident, therefore, that because of the peculiarities of agriculture, the terms and conditions of loans to farmers must have a greater degree of flexibility than is usually provided by commercial credit agencies.

Some Theoretical and Practical Considerations in the Provision of Capital in Farming.—The lack of adequate capital is one of the main factors limiting the increase in efficiency of farm operations. Theoretically, in order to maximize returns additional units of capital should be applied in the operation of a farm business until the returns just pay the cost of the added capital. The marginal productivity of capital in commercial agriculture has been estimated at about ten per cent. With an interest rate of about six per cent much capital can profitably be applied in agriculture.

There are a number of reasons why capital is not used to the fullest extent in farming:

1. Farmers often are not fully aware of the possibilities for increased returns through the use of additional capital.
2. Farmers tend to think of borrowed funds as indebtedness and a stigma is attached to "production debts" as well as to "consumption debts".
3. There is an aversion on the part of the farmer to assuming risks. Farmers tend to avoid the accumulation of debts in the fear of inability to meet obligations.
4. Many farmers lack adequate collateral. This is especially true in the case of young men who hope to become established farmers.
5. Capital rationing is often exercised on the part of the lender. Lenders avoid taking a chance on investing money in an unstable industry like agriculture when other alternatives are available. This tendency is aggravated by lack of familiarity with farming on the part of officials of lending institutions.
6. The terms of credit are often not adapted to the nature of the loan. The period of loans may not fit the length of time required for the production of crops or livestock. Often, too, the time when repayment is required does not coincide with the time of sale of the product.

These are some of the main reasons why it is difficult to make a full and efficient use of capital in agriculture. Nevertheless, these difficulties are not insurmountable and some suggestions may be made concerning possible improvements in the provision of capital in farming:

1. Consideration should be given to the need for a more flexible instrument than the mortgage in providing credit to agriculture. In order to meet fully the high variability of income in farming, it may be necessary that funds from other parts of the economy should participate as equity capital rather than debt capital. Thinking particularly in terms of the Prairie Provinces and the use of a crop repayment plan, the outside investor would then share in both returns and losses.

2. Education of the borrower should be directed towards improvement of the credit worthiness of his farm business and lenders should be better informed about the problems of credit in farming.

3. The terms of loans should be better adapted to the specific needs of the individual farmer.

4. Improvement is required in the economic appraisal of farms as security for a loan. Greater weight might well be given to the personal qualities of the applicant.

5. Farm management supervision of borrowers might be considered as a means of decreasing the risk of loans.

6. The problem of lack of collateral on the part of many would-be farmer borrowers might be met through increased corporate ownership of farms which might be made available to farmers under a rental purchase agreement.

The accumulation and use of capital in farming have resulted in notable advances in agricultural efficiency during the war and postwar years. Although most of this capital has been provided by farmers themselves, considerable amounts have come from outside the industry. Increased amounts of capital still have an important role in the further development of the industry. Because of much higher capital requirements per farm now and in the future than formerly, credit institutions have a potentially bigger role to assume in that development than in the past. That development will take place most satisfactorily if farmers understand the role of capital in their business and if institutions adapt their farm credit machinery to the unique requirements of agriculture.

CROP-LABOUR REQUIREMENTS IN THE SOUTH CENTRAL RED RIVER VALLEY OF MANITOBA¹

J. G. MACKENZIE

One of the major problems in farm organization is the study of methods and practices which will result in a high output from the use of available labour resources. The farmer, however, cannot go very far without knowledge of the amount of labour required by each of his different enterprises.

In order to provide some useful information on this subject the Economics Division in 1952 made a study of crop-labour requirements in the south-central Red River Valley of Manitoba. This article will deal specifically with labour requirements for field crops grown in the Morris and Rhineland municipalities.

Information on labour requirements was obtained from 143 randomly selected farms. These data are expressed in terms of man-hours and represent the time spent on the production of crops.

The total man-hours required per acre for each crop depended primarily on the cultural practices followed and whether the crop was grown on summerfallow or on land which had been cropped the previous year. The seasonal distribution of labour requirements for the seven most important field crops grown in the area is summarized in Table 1.

Grain Crops.—Wheat, oats, barley and flax were the most important grain crops in the area and similar cultural practices were employed in the production of each of these crops. However, 45 per cent of the wheat but only one per cent of the oats, four per cent of the barley and three per cent of the flax were grown on summer-fallow. So, for pre-seeding operations wheat required fewer man-hours per acre

¹ This article presents part of the results of a crop-labour study which was conducted by the Economics Division, Canada Dept. of Agriculture in 1952. For a full description of mechanization, labour and land use see "Farm Mechanization and Labour in the South-Central Red River Valley of Manitoba" in *The Economic Annalist*, Vol. XXIII, No. 6. 1953. pp. 138-142.

than the other grain crops. Oats and barley each required the same amount of time and flax the most time for spring tillage operations. Flax was generally sown after oats and barley and required more cultivating and drag-harrowing for weed eradication.

Stubble land used for a second crop was usually plowed or one-wayed the previous fall and then cultivated or disked in the spring. Most of this land was drag-harrowed once or twice before seeding. Thirty per cent of the land was also disc-harrowed in the spring. When grain crops were grown on summerfallow spring operations consisted in cultivating once and passing over with the drag-harrow once or twice.

Seeding operations required the same amount of time for each of the grain crops. The small farms generally used the grain drill for sowing grain but many of the large farms used the disker for part of this operation. Reseeding was required on two per cent of the wheat and oat land, nine per cent of the barley land and eight per cent of the flax land.

All grain crops required the same amount of time for post-seeding operations; the seeded land was drag-harrowed once or twice. Packing was done on two per cent of the wheat land, five per cent of the oat, six per cent of the barley and seven per cent of the flax land. Corresponding figures for spraying were 23, 30, 34 and 37 per cent respectively.

Table 1.—Seasonal Distribution of Labour Requirements per Acre for Specified Field Crops and Summerfallow, 143 Farms, Morris and Rhineland Municipalities, 1952

Season	Wheat	Oats	Barley	Flax	Sugar-beets	Sun-flowers	Corn	Summer-fallow
—man-hours per acre—								
Previous fall ^a	0.34	0.61	0.60	0.60	0.34	0.62	0.66	^b
Spring (pre-seeding).....	0.32	0.56	0.54	0.84	1.18	0.63	0.76	.....
Seeding.....	0.29	0.32	0.30	0.34	1.05	0.46	0.51	.....
Post-seeding.....	0.22	0.25	0.23	0.20	26.97	1.68	3.58	.....
Harvest.....	1.15	1.58	1.16	1.15	17.50	1.56	4.28	.....
Miscellaneous ^c	0.85	0.85	0.85	0.85	0.85	0.85	0.85	.....
Total.....	3.17	4.17	3.68	3.98	47.89	5.80	10.64	2.48

^a Work on stubble land only.

^b Man-hours per acre for summerfallow not estimated by season.

^c Includes seed preparation and machinery repair.

The common method of harvesting grain was to swath and combine. Grain was hauled from the combine either direct to commercial elevators or to farm storage bins. Oats required considerably more time for harvesting than the other grain crops; because some were to be used for fodder, ten per cent of the crop was cut with a binder and then either stacked or chopped. Oats were threshed on two farms.

Sugar Beets.—Sixty-seven per cent of the acreage sown to beets in 1952 was on summerfallow and the remainder on land which had been cropped the previous year. To prepare the stubble land for seeding the common practice was to plow or one-way and follow with the cultivator or drag-harrow during the previous fall. In the spring before seeding, all beet land was cultivated once or twice and drag-harrowed three or four times. Packing before seeding was done on 40 per cent of the land. The weather was dry at seeding time and germination was unsatisfactory. Consequently most of the beet acreage was reseeded once and some fields were reseeded twice.

Post-seeding operations included drag-harrowing, packing, cultivating, weeding and thinning, and spraying. Only a few operators reported using the drag-harrow or packer after seeding. Forty per cent of the beet land was sprayed. All beet land was row-cultivated about three times during the summer. Weeding and thinning, the main operation during this period, required 25.55 man-hours per acre. Most of this was hand labour done by elderly men, women and teen-age children hired on a contract or a "per acre" basis.

Several methods were used to harvest sugar beets. The beet harvester, which tops, lifts and loads in one operation, was used on 58 per cent of the total acreage. On 42 per cent of the acreage beets were lifted with a beet lifter; 17 per cent of these beets were topped with a beet topper and 25 per cent by hand. Topping by hand accounted for most of the labour, that is, one-third of the time spent on harvesting. Hauling beets to loading stations required one-quarter of the total time.

Sunflowers.—The same general cultural practices were used in the production of sunflowers as for grain crops. Forty-three per cent of the total sunflower acreage was plowed and 54 per cent was disked in the fall, and 55 per cent was disked in the spring. The disk-harrow was used on eight per cent of the total acreage. Most of the land was cultivated once and all of it was drag-harrowed once or twice before it was sown.

Germination was unsatisfactory and 14 per cent of the sunflower acreage had to be reseeded. In post-seeding operations the total acreage was drag-harrowed once and 20 per cent was drag harrowed twice. Ninety per cent of the sunflowers were cultivated with a row cultivator. Although only seven per cent of the acreage was hand-weeded the time required for this operation averaged 1.05 man-hours per acre for the total acreage.

Sunflowers are harvested with the self-propelled grain combine. For this operation the conventional combine reel is replaced with a short, solid three-armed reel and long narrow pans are attached to the cutting bar. With these modifications the combine acts as a stripper and only the sunflower heads are passed into the feeding auger.

Corn.—Fifty-eight per cent of the corn acreage was plowed in the fall and five per cent in the spring; four per cent was one-wayed or disked in the fall and 11 per cent was one-wayed or disked in the spring. Forty-two per cent was cultivated and 18 per cent was drag-harrowed in the spring before seeding.

The grain drill was used to seed sixty per cent of the corn and the corn drill for 40 per cent. Following the seeding operation most of the acreage was drag-harrowed twice. During the early growing season the corn crop was row-cultivated two to three times. Hand-weeding was done on 60 per cent of the land and required an average of 2.01 man-hours per acre for the total acreage.

A mechanical picker was used to harvest 76 per cent of the corn crop, 22 per cent was cut with a binder for fodder, and two per cent was swathed and baled. Before cutting, ten per cent of the corn had been picked by hand. All of the picked corn was shelled with a corn sheller.

Summerfallow.—The initial operation for fallow land was to plow, one-way or disk in the fall. In the early part of the following summer this land was plowed, one-wayed or disked again. During the summer all fallow land was cultivated three times and drag-harrowed twice. Implements such as the disc-harrow, the spring-tooth harrow and the rod-weeder were also used to a considerable extent on some farms.

Factors Affecting Crop-Labour Requirements.—Many factors determine the labour requirements in crop production. Of these, the physical features of the soil and climatic conditions are beyond the control of the operator. Others, however, are associated with the management of the farm and are either partly or completely within the operator's control.

One of the most important of these management factors is size of farm. For example, in the production of wheat, oats, barley and flax, on the farms included in the study, there was a decrease in man-hours per acre as size of farm increased (group average in Table 2).

The small farms spent more time per acre than the large farms on such tasks as cleaning and handling seed, and machinery servicing and repair. It was only on the large farms that individual members of the labour force were able to devote all or most of their time to one particular job, a situation which made it possible to derive some of the advantages of labour specialization. This resulted in fewer interruptions in field work and a fuller use of the machines. The large farms were also in a better position to adopt and make good use of labour-saving innovations in the production of crops.

The size of field is another factor determining crop-labour requirements. The smaller the field the greater the amount of time that has to be spent on turning and moving from one field to another. Fields averaged 35 acres in size for all farms in the study area and ranged from an average of 15 acres per field on farms with less than 121 acres of cropland to 59 acres per field on farms with 400 or more acres of cropland. A classification of fields into size groups indicated that for farms with 121 acres or more of cropland an increase in the size of fields was usually associated with a decrease in the number of man-hours of work per acre (Table 2).

On farms with less than 121 acres of cropland, however, there was no relation between size of field and labour requirements for oats, barley or flax. On many of the small farms the operator did not have a complete machinery complement and hired a large part of the field work done by a neighbour. Custom-work machines were usually large and had a greater capacity than those commonly found on the small farms. So, on several of the farms in this size-group the number of man-hours required per acre was low. On the other hand, on farms with more than 121 acres of cropland most of the work on crops was done with machines owned by the operator.

Table 2.—Labour Requirements per Acre for Specified Field Crops According to Cropland per Farm and Size of Field, 143 Farms, Morris and Rhineland Municipalities, 1952

Cropland per Farm and Size of Field	Crop			
	Wheat	Oats	Barley	Flax
	—man-hours per acre—			
Farms with 50-120 acres—				
Field Size:				
13 acres and under.....	4.56	5.46	4.92	5.38
14-19 acres.....	4.50	7.05	5.55	6.48
20 acres and over.....	3.44	5.49	5.06	6.33
Group average.....	4.27	6.03	5.19	5.68
Farms with 121-400 acres—				
Field size:				
19 acres and under.....	4.67	5.49	5.15	4.78
20-35 acres.....	3.39	4.64	4.62	4.19
36 acres and over.....	3.51	3.79	3.22	3.25
Group average.....	3.68	4.97	4.25	4.39
Farms with 401 acres and over—				
Field size:				
41 acres and under.....	3.03	3.20	3.15	3.36
42-59 acres.....	2.89	3.31	3.32	2.95
60 acres and over.....	2.73	2.50	2.64	3.10
Group average.....	2.86	3.09	3.03	3.27

The size of pull-type machinery is limited by the power of the tractor. Therefore, the size of the tractor may be indicative of the size of pull-type machines when the entire machinery complement is considered in an analysis of labour requirements in crop production. When the farms were grouped according to size of tractor within each farm size-group it was noted that larger tractors enabled farmers to make a significant reduction in the number of man-hours of work per acre (Table 3).

Associated with size of tractor is the kind of tractor-drawn machine used. Although one-ways and disks may be bought in various sizes these are heavy draft machines that require fairly large tractors and so are designed primarily for use on large farms. On many small farms the tractor power was inadequate to pull a one-way or a disk, and a plow had to be used in place of the other surface tillage machines.

Only 6-foot pull-type combines were found on farms with less than 121 acres of cropland. On farms having from 121 to 400 acres the 6- and 8-foot pull-type and 10- and 12-foot self-propelled combines were used. The 12- and 14-foot self-propelled combines were the common size and type on farms with more than 400 acres of cropland.

Table 3.—Labour Requirements per Acre for Specified Field Crops according to Cropland per Farm and Size of Tractor, 143 Farms, Morris and Rhineland Municipalities, 1952

Cropland per Farm and Size of Tractor	Crop			
	Wheat	Oats	Barley	Flax
	—man-hours per acre—			
Farms with 50-120 acres—				
2 plow tractor and smaller.....	5.19	6.82	5.56	6.06
2-3 plow tractor and larger.....	3.52	5.17	4.95	5.34
Farms with 121-400 acres—				
2-3 plow tractor and smaller.....	3.93	5.50	4.66	4.58
3 plow tractor and larger.....	3.47	4.49	3.88	4.19
Farms with 401 acres and over—				
3 plow tractor and smaller.....	2.65	3.34	3.40	3.66
3-4 plow tractor and larger.....	2.91	3.02	2.97	3.18

In attempting to determine the type of farm organization which will reduce labour requirements to a minimum the farm operator is confronted with many problems. Farming has to compete with other industries for the use of labour and it is thus necessary for the farmer to search for continuous improvement in his farm organization and to increase his skill in planning farm operations in order to maintain a high degree of efficiency in the use of labour resources. An analysis of the data obtained through this study indicates that it is possible to increase labour efficiency on many of the smaller farms. This could be achieved, in part, by the use of larger machines and by enlarging the size of the fields. In many cases the working capacity of the entire machinery complement could be increased by the use of a new or more powerful tractor. The co-operative use of larger, more expensive machines deserves serious consideration. The layout of many farms is not particularly well adapted to the efficient use of machinery. If the layout could be re-arranged so that the small fields were incorporated with adjoining fields, it would increase the working capacity of the machines and decrease labour requirements per acre.

LABOUR REQUIREMENTS FOR DAIRY BARN CHORES

J. M. FITZPATRICK

Each year over 30 million hours of labour are needed to do dairy chores on Ontario farms. Most of this work is of a routine nature, being done twice a day, every day. Variations in chore time on dairy farms are wide and opportunities for improvement are great. To assist farmers interested in reducing the time spent on these chores a study¹ was made to provide a guide for the measurement of dairy labour efficiency and a description of what some farmers have done to reduce time and travel in dairy chores.

This article will describe some of the results of that study and illustrate how work simplification techniques that have been used with success in industry may be applied to the simplification of dairy chores.

Some farmers have improved their work methods to a much greater extent than their neighbours or other farmers. Evidence of these improvements was obtained from a study of dairy labour requirements on 1,086 Ontario Dairy Herd Improvement Farms. Some of the dairymen on those farms cared for their herds in less than 100 hours per cow per year whereas others required twice that amount of labour. Two important factors affecting labour efficiency were herd size and production per cow (Figure 1). Other, and equally important, factors were the causes of the wide variations in efficiency within each size-of-herd group. Some

¹ This study was conducted jointly by the Farm Economics Branch of the Ontario Dept. of Agriculture and the Economics Division of the Canada Dept. of Agriculture.

farmers, within each group, did not follow any definite plan in doing their work whereas others observed their own routine, studied alternative methods of improving their work program and made decisions which led to increased efficiency in the use of their labour resources.

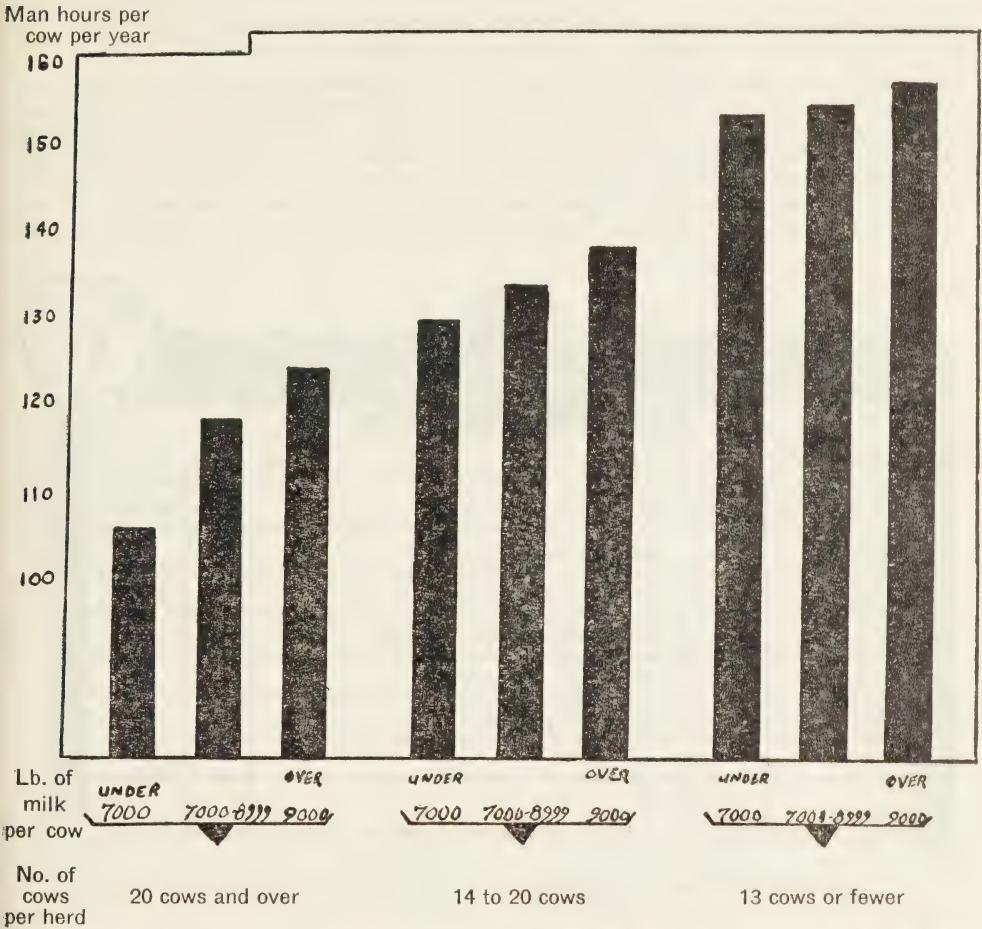


Figure 1.—The relationship between the number of cows per herd and pounds of milk per cow and the number of man-hours required per year.

On the average, 79 per cent of a dairy farmer's income came from dairy animals.¹ Although labour ranks second to feed as a cost item, little progress has been made in the reduction of the labour needed in the barn since the invention of the milking machine. The time has come to search for new ways of saving labour. The best way to proceed probably consists in a study of work methods now in use and of the various ways in which these methods may be improved.

A Method of Studying Dairy Barn Chores.—In a study of dairy barn chores a farmer should enlist the help of a man who is in sympathy with his aims. He may find it preferable to have an outsider who will observe the work being done without having any preconceived ideas as to how it should be done.

¹ Unpublished M.A. thesis data supplied to the Farm Economics Branch, Ontario Department of Agriculture, Toronto.

The watcher's equipment should consist of paper, pencil, tape measure, a clip-board and a stop-watch (any good watch with a second hand will do). The sheets of paper may be ruled vertically and should include columns shown in Figure 2.

Before taking a time and travel record a scale plan of the barn should be drawn showing stanchions, silos, grain storage, chutes and location of equipment. This drawing will be found indispensable when it comes to answering questions such as, "Is this trip really necessary?" or, "Is there an easier and better way of doing it?"

After the major distances have been recorded by the enumerator, the farmer can then go about his tasks in the barn in the usual manner, neither speeding up the chore routine nor slowing it down. The watcher follows him with clip-board and time-piece (Figure 2). The watch is started as the farmer begins and continues until the work is finished. The watch readings and distances walked are recorded in columns (1) and (5) respectively and a brief description of the job is entered in column (3). There is no need to work out the time taken (column 2) for each operation until after the

NAME _____		WORKER _____		RECORDER _____		DATE _____		AM _____ P.M. _____	
WATCH READING	TIME TAKEN	OPERATION			CODE	DISTANCE			
42.85		m on # 16				5			
47.95		to cow # 14				18			
48.10		mach strip # 14				—			
48.50		m off # 14				—			
48.85		#14 out				8			

Figure 2.—Clip-board, stop-watch and record form used in taking records.

work has been completed. Similarly, a code for each job (examples: handle milker (M), care for milk (D), machine strip (R), wash equipment (Z)) can be put in at a later date to simplify the grouping together of similar jobs. This procedure was used as the basis for analyzing dairy barn chores in this study.

The time study chart (Figure 3) gives only descriptions and comparisons when completed. It will not tell a farmer how to improve his work but will indicate likely places for improvement. The development of improved work methods is largely an individual problem and must be worked out for each farm, with the aid of the work charts and floor plans. Steps that call for improvement may be noted by checking each job and each part of a job against the following procedure:¹

1. Eliminate, combine or re-arrange the details of a job or jobs for better order.
2. Have buildings and work areas close together to reduce travel.
3. Provide for circular travel to eliminate back-tracking.

¹ Vaughan, L. M. and L. S. Hardin. *Farm Work Simplification*. New York, John Wiley and Sons, Inc. and London, Chapman and Hall, Ltd. 1949. p. 59.

- 4. Provide paths, alleys, and doorways that are sufficiently wide, level, and smooth for carts.
- 5. Locate tools and supplies at the place where the work is done.
- 6. Plan to complete one operation where another begins.
- 7. Haul maximum practical loads to reduce trips.
- 8. Work at a reasonable speed—avoid wasting energy.
- 9. Review the chore routine in order to make it more systematic and logical.

After the new routine has been worked out and put into practice for a few days, the chores should again be timed in order to get the best possible arrangement. Individual savings are usually small but when added to other savings and repeated 730 times each year the total result is usually a very worthwhile achievement.

Table 1.—Standard Times and Distances Travelled in Stanchion Barns

—	Milking Operations			
	Time Required per Cow per Day		Distance Travelled per Cow per Day	
	Summer	Winter	Summer	Winter
	min. + sec.	min. + sec.	—feet—	
Prepare equipment.....	40	44	33	29
Wash udder.....	39	55	40	38
Handle milker.....	76	88	98	89
Care for milk.....	87	83	113	83
Handle cows.....	70	10	66	3
Hand strip.....	46	43	14	8
Machine strip.....	59	78	21	30
Wait.....	54	68	7	11
Wash equipment.....	43	74	32	26
	8 + 34	9 + 2	424	317
	Other Chores			
	Time Required per Cow Equivalent ^a per Day		Distance Travelled per Cow-Equivalent per Day	
Feed hay.....	1	53	.....	29
Feed silage.....	6	53	2	28
Feed grain.....	5	31	8	27
Clean stables.....	2	80	3	37
Bedding.....	.....	31	.....	19
Feed calves.....	5	20	5	14
	19	4 + 28	18	154

^a Cow equivalent: The equivalent of one mature cow in feed requirements.

Standards of Accomplishment for the Dairy Farmer.—For many years standards have been used to assist farmers in planning their farm operations; the best known of these are probably the feeding standards. Rates of seeding and fertilizer applications are other standards in common use. These standards are not to be applied rigidly; they are prepared mainly to provide the farmer with a guide for making adjustments on his own farm. Standards (or averages) of measurement in work can serve the same general purpose.

1. *Standard Times and Distances Travelled in Stanchion Barns.*—To determine standard time requirements and distances travelled for tasks in stanchion barns, ten dairy farms with a total of 237 milking cows were studied in detail. Scale plans of the barns and time-and-travel records for morning and evening milkings were used. All operators had average skill and training and were efficient in overall farm management practices. The results (Table 1) should be used only as a guide in planning farm operations.

Table 2.—Time and Distances Travelled in Stanchion Barns

Work	Time Required per Cow per Milking		Distance Walked per Cow per Milking	
	min. + sec.	per cent	feet	per cent
Behind the cows.....	3 52	49	259	49
In front of the cows.....	1 22	17	89	16
Other ^a	2 43	34	186	35
Total.....	7 + 57	100	534	100

^a "Other" refers to preparing equipment, caring for milk, washing equipment, feeding calves and pitching down hay

An examination of the standards presented in Table 1 indicates that it is preferable to have the cows facing out, rather than facing in, in a two-row stanchion barn. As shown in Table 2 almost three times as much work had to be done and three times as long a distance covered when doing the work behind the cows as required when doing the work in front of the cows. Work will therefore be restricted to a smaller area and steps will be saved if the cows face out.

Similar findings were made through an examination of the chore times required by the Dairy Herd Improvement Farmers of Ontario. On the average, more time was required per 100 pounds of milk in a one-row stanchion barn than in any other type of stanchion barn, the least time being needed when the cows faced out in a two-row stanchion barn with large end doors (Figure 3).

The time spent in a stanchion barn varies from farm to farm. To arrive at a goal for a given farm the number of cows milked and cow equivalents should be used together with the time standards. If a farmer has 20 milking cows and 30 cow-equivalents, the time taken to do the dairy chores will be as indicated in Table 3.

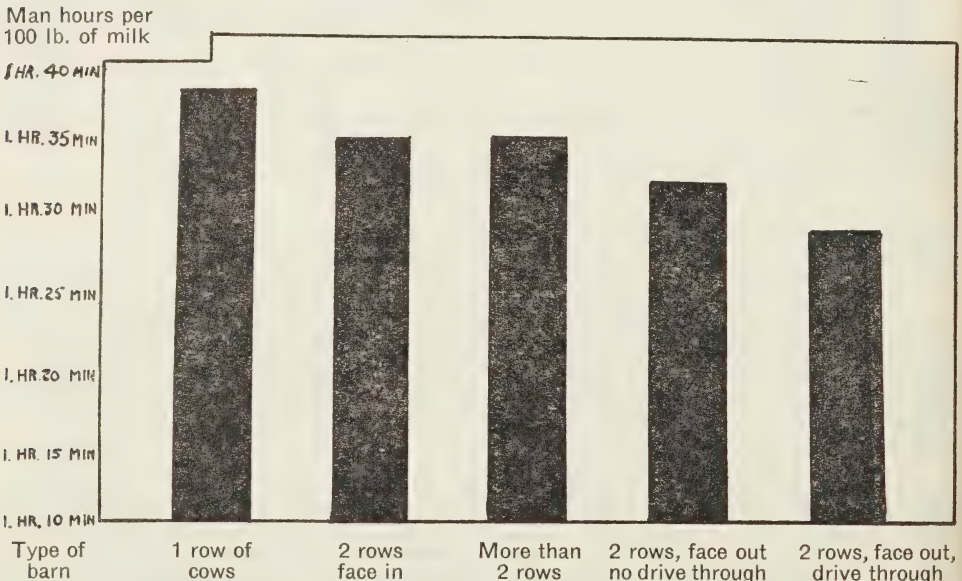


Figure 3.—Relationship between barn types and hours of labour required in the production of milk—1,086 herds.

Table 3.—Chore Time and Distances Walked per Day in Stanchion Barns

	Time Required per Day		Distance Travelled per Day	
	Summer	Winter	Summer	Winter
	hrs. + mins.	hrs. + mins.	—miles—	
Milking operations.....	2 52	3 1	1.6	1.2
Other chores.....	10	2 14	.1	.9
Total.....	3 + 2	5 + 15	1.7	2.1

2. *Standard Times and Distances Travelled in Loose-Housing Barns.*—Chore work done in loose housing barns differs considerably from that in stanchion barns. New standards must therefore be determined. Ten farms having 219 milking cows and using the loose housing system were time-studied in detail. The operators had average skill and training in handling cows in loose housing barns. In future years the standards presented in Table 4 may have to be revised as this manner of handling cows is still comparatively new on Canadian farms.

Comparison of Time and Travel in Stanchion and Loose Housing Barns.—A comparison of the time and travel records for stanchion and loose housing barns revealed that in the loose housing barns 14 per cent less time and 27 per cent less travel annually were required than in the stanchion barns. Savings in winter dairy chores in loose housing barns accounted for the major difference. Only about three-quarters as much time and three quarters as many steps were used during the winter to look after 20 milking cows and 30 cow-equivalents in loose housing as compared with stanchion barns (Table 5).

Table 4.—Standard Times and Distances Travelled in Loose Housing Barns

	Milking Operations			
	Time Required per Cow per Day		Distance Travelled per Cow per Day	
	Summer	Winter	Summer	Winter
	min. + sec.	min. + sec.	—feet—	
Prepare equipment.....	37	29	27	25
Wash udder.....	42	50	24	26
Handle milker.....	79	112	48	69
Care for milk.....	68	80	48	68
Handle cows.....	114	93	95	59
Hand strip.....	5	8	2	2
Machine strip.....	42	46	20	16
Wait.....	95	66	15	14
Wash equipment.....	69	36	26	25
Total.....	9 + 11	8 + 40	305	301
	Other Chores			
	Time Required per Cow-Equivalent ^a per Day		Distance Travelled per Cow-Equivalent per Day	
Feed hay.....		16		5
Feed silage.....		26		9
Feed grain.....	13	28	10	23
Clean stable.....	4	13	2	8
Bedding.....	1	14	2	5
Feed calves.....	6	21	6	12
Total.....	24	1 + 58	20	62

^a Cow-equivalent: the equivalent of one mature cow in feed requirements.

Table 5.—Comparison of Time and Distances Travelled in Stanchion and Loose Housing Barns.

	Time Required per Season		Distance Travelled per Season	
	Summer	Winter	Summer	Winter
	—hours—		—miles—	
Stanchion barn.....	546	971	306	389
Loose housing barn.....	588	719	228	278
Increase or decrease.....	+42	-252	-78	-111
Percentage increase or decrease.....	+ 6	- 26	-25	- 28
Percentage annual decrease.....		14		27

During the summer months six per cent more chore time was needed in the loose housing barn than in the stanchion barn. This difference in time was due mainly to the fact that cows moved slowly into stalls at milking time.

Variations in Dairy Chore Time per Cow.—1. Milking Operations.—Among the farms time-studied there was a wide range in the milking-machine time per cow. The longest average time per cow per farm was 277 per cent of the shortest time (Figure 4). Despite the fact that nearly all cows can be trained to milk out rapidly only 37 per cent of the cows included in this study were milked out in five minutes or less.

The time spent in milking individual cows varied even more than the average time per cow per farm. The irritation caused by the milking machine after the udder is emptied can cause bruises which may make the cow susceptible to mastitis infection. To avoid this and save labour a fast, uniform system of milking should be followed.

2. Other Chores.—Great differences in time also occurred among farms in feeding, cleaning and bedding operations. The feeding operations listed in Figure 5 are typical of "other" chore work. When hay was fed efficiently, grain and silage were usually fed inefficiently. Few farmers did all jobs well. Some required four times as long to do the work as others. In general, less time was required for cleaning, feeding, bedding and looking after calves in loose housing than in stanchion barns.

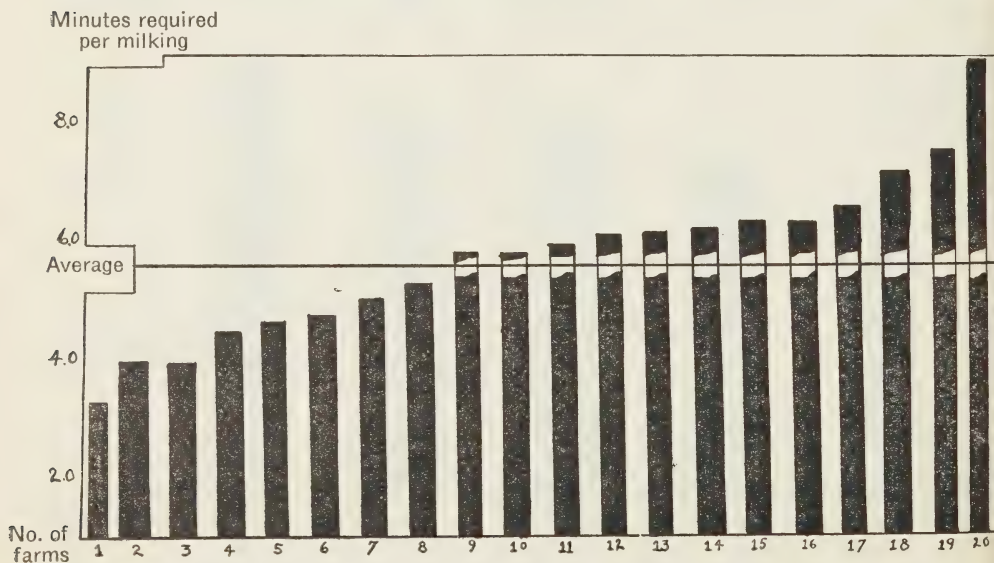


Figure 4.—Milking machine time per cow on 20 Ontario dairy farms.

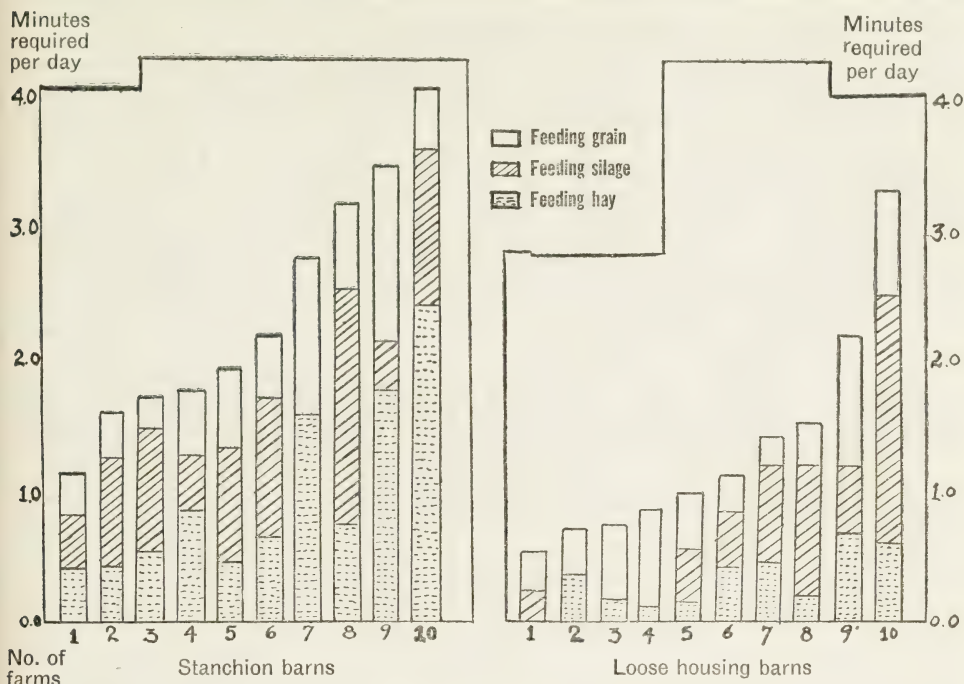


Figure 5.—Time requirements per cow for feeding operations.

Conclusions.—The time-and-motion method used to examine dairy barn chores in this study is equally effective in studying the processing of most farm commodities and in improving the method of preparation of these commodities for the market. Farmers are continually searching for better ways to do their work and for standards against which they can check present achievements. Because many farm jobs are done at about the same time a farmer has not the opportunity to examine the work methods of other farmers. Through work simplification studies these work methods can be made available to him. A study of the methods used by various groups of farmers contributes to an increase in labour efficiency on individual farms.

PUBLICATIONS OF THE ECONOMICS DIVISION

Sampling Experience in the Ottawa Cheese Survey. A Methodological Note. Drayton, L. E. Processed bul. Ottawa, December 1953. pp. 10.

This "methodological note" reviews some of the main difficulties encountered in attempting to adhere to a pre-designed research sample. The purpose of the note was "to examine the relation between the designed sample and the actual sample when interviewers make substitutions for those homes where there are refusals or the interviewee is not at home, and to evaluate some of the factors leading to such failures to reach the consumers designated in the sample".

Survey of the Production and Marketing of Potatoes in Alberta. Darcovich, W. and J. A. Parfett. Ottawa, December 1953. pp. 35.

This report brings together the findings of a study of production and marketing of potatoes in Alberta, undertaken at the request of the provincial Potato Production and Improvement Committee.

Two sections, of an introductory character, deal with *The Potato Industry in Alberta* and the *Relative Importance of Potatoes*. The first of the two main sections of the report studies three principal aspects of the *Commercial Production of Potatoes: Farm Organization; Cultural Practices; and Disposition and Quality of Crop*. The major section describes and analyzes problems relating to the *Marketing of Potatoes*.

Farming on the Almasippi Soils of Central Manitoba, 1950. Hudson, J. P. Economics Div. in co-operation with the Dept. of Political Economy, University of Manitoba. Ottawa. December 1953. pp. 29.

A farm business study which provides descriptive and analytical data on the *General Characteristics of the Area; The Operators and Their Families; Farm Organization* (its physical and financial aspects and the financial progress of the farm operators); and, *Factors Affecting Farm Success*.

Sales of Cheese in Selected Canadian Cities. Drayton, L. E. Ottawa. December 1953. pp. 47.

A two-phase study of the consumption of cheese in selected cities. The first phase included an audit of sales by wholesalers in seven cities and the second consisted of a consumer preference survey conducted by a commercial research agency in Toronto and Vancouver and by the Economic Division in Ottawa.

In his report, the author studies the following aspects of cheese consumption: *Variations in Consumption of Cheese by Cities; The Pattern of Cheese Use; Effect of Socio-Economic Level on Cheese Consumption; Effect of Origin on Cheese Consumption; Effect of Family Composition on Cheese Consumption; and Opinion of Cheese*. He concludes with a *Summary and Marketing Suggestions*.

UNITED NATIONS PUBLICATIONS

Commodity Trade and Economic Development. Dept. of Economic Affairs. New York. (In Canada: The Ryerson Press, Toronto and Periodica Inc., Montreal). November 1953. pp. vii + 102.

A report on commodity trade and economic development prepared by a committee of experts appointed by the Secretary-General of the United Nations. The committee has divided its report into three main parts: *The Problems; The Measures; and Conclusions*. The main recommendation of the experts pertains to the establishment of an inter-governmental trade stabilization commission.

Yearbook of International Trade Statistics, 1952. New York, Statistical Office, Dept. of Economic Affairs. (In Canada: The Ryerson Press, Toronto, and Periodica Inc., Montreal) 1953. pp. 384.

The 1952 *Yearbook*, the third issue in the series, contains statistics on the external trade of 70 countries, covering 97 per cent of the world's trade (excluding the U.S.S.R. and eight satellite countries).

Economic Bulletin for Europe, Second Quarter, 1953. Vol. 5, No. 3. Geneva, November 1953. pp. 64.

The first section presents a *Review of the Economic Situation in Europe During the Second Quarter of 1953* and is divided into three subsections: (1) *Developments in Eastern Europe*; (2) *Trade and Payments of Western Europe*; and, (3) *Internal Developments in Western Europe*. Section II includes two special articles: *A Note on Index Numbers of Terms of Trade and Rent Control Policies in Western Europe*. Section III contains 19 tables of *Supplementary Statistics* and Section IV a *List of Special Articles Which Have Been Published in the Economic Bulletin for Europe*.

Statistical Yearbook (Annuaire Statistique) 1953. Prepared by the Statistical Office of the United Nations, Dept. of Economic Affairs. New York (In Canada: The Ryerson Press, Toronto and Periodica Inc., Montreal). 1953. pp. 578.

This fifth issue of the *Statistical Yearbook* depicts economic progress in the world during the past two decades. It includes figures on population, production, consumption, transport, trade, social and cultural developments, and other subjects.

According to available statistical information, world industrial production has increased by 189 per cent during the two decades ending in 1952 and the value of world trade has risen by 250 per cent since 1938.

OTHER PUBLICATIONS

Disponibilités, Modes de Vente et Lieux d'Écoulement des Produits Agricoles, 1950-51-52. Région de Trois-Rivières, No. 6. Québec, Division des Marchés et des Enquêtes du service de l'Economie Rurale, Ministère de l'Agriculture de la Province de Québec. pp. ii and 192. 1953.

The first in a series of eleven statistical reports on the marketing of agricultural products in the province of Quebec. It refers to agricultural Area 6—the Trois-Rivières area which includes the counties of Berthier, Champlain, Lavolette, Maskinongé, Nicolet and St-Maurice.

The main purpose of the study is to secure a more accurate knowledge of the methods of sale, to make an inventory of the volume of products available, and to determine the final destination of farm products with a view to providing a more systematic distribution of those products.

The well-documented 192-page report opens with an introductory table on the agricultural characteristics of each of the parishes in the area and a summary of the volume of agricultural products in the area, and is divided into five main sections dealing with: livestock, poultry products, hay, seeds, dairy products, fruits and vegetables, and other products.

Food and Population and Development of Food Industries in India. Mysore, India, Central Food Technological Research Institute. 1952.

A document which brings forth the views of leading experts on two of India's major socio-economic problems: food and population. Part I is a report of a *Symposium on Food and Population* and Part II, a report of a *Symposium on Development of Food Industries in India*. An Appendix includes the recommendations made by a special committee appointed by the Minister for Home, Food, Agriculture and Public Works, Mysore.

Demographers and economists stress the steady increase in population and the apparent inability of agricultural production to keep pace with the requirements of the increasing population. Agriculturists and administrators, on the other hand, draw attention to the results already achieved by the "Grow More Food Campaign", education, mechanization, and irrigation projects. The papers on the development of food industries illustrate India's awareness and its desire and ability to cope with the practical problems pertaining to the production of human food. Emphasis is given to the need for providing the food industry with raw materials of the right quality, the development of adequate processing techniques, and facilities for expanding markets beyond the frontiers of India, and the need for continued research and co-operation between research agencies and the food industry.

Proceedings of the Eighth International Conference of Agricultural Economists. *Cumberlege, Geoffrey.* London, New York and Toronto, Oxford University Press. 1953. pp. xiii + 608.

The *Proceedings* of the Eighth International Conference of Agricultural Economists includes 23 papers by outstanding agricultural economists of eleven different countries and one paper by two economists of the Economics Division of F.A.O. It also includes questions, the replies thereto, and the discussions which followed the presentation of each paper before the Conference. The topics discussed at the meeting held at Kellogg Center, Michigan State College, U.S.A., in August 1952, were of a very timely character and fundamental to agriculture—especially food production and distribution—in all regions of the world. The two opening papers dealt with *The Economics of Population and Food Supplies*. Frank W. Notestein read a paper titled *Economic Problems of Population Change* and John D. Black a paper on *Trends in Food Supplies in the World*. Notestein claims that we can learn to speed the reduction of fertility with some of the efficiency already achieved in reducing mortality. He sees it as the economist's duty to make himself truly useful by straying from the familiar paths and becoming a general social scientist concerned with institutional changes. John D. Black sees a solution to the world food problem in the integration of two different approaches: the increase in food output and the reduction of family size and birth rates. This integration should be worked out country by country and "direction of effort toward this end is the great task and great hope of mankind".

These two papers were followed by others on: *The Problem of Population and Food Supply in India*; *Economic Problems in the Integration of Western European Agriculture*; *The Economic Objectives of F.A.O., Point IV, and the Colombo Plan*; *Agricultural Developments in the Tropics and Sub-Tropics: Ways and Means*; *The Problems of Planning Agricultural Programmes in Less Developed Countries (with special reference to Latin America)*; *The Role of Market Development in the Further Utilization of Agricultural Resources*; *Long-Term Objectives in Land Tenure*; and *Economic Problems in the Classification of Land*.

Another series of papers related to the *Professional Problems in Agricultural Economics* and included discussions on: *Training Agricultural Economists*; *Research in Agricultural Economics*; and *Extension in Agricultural Economics*. J. O. Morales considers that training should "furnish professional education at a functional level with the social, economic, and institutional development . . . Such training should prepare the student to fit easily into the society in which he is supposed to operate". Edgar Thomas reviews and analyzes the problems of method and technique and of direction and administration involved in research in agricultural economics. He stresses the difficulties associated with the financing of independent research and the increasing dependence on State funds. He draws attention to the need "to safeguard and preserve the integrity and the disinterested character of research activities". Albert Huni describes the differences in the amount of extension work done in different countries. A leader among extension economists in Switzerland, Huni says that "extension in agricultural economics is determined to a great extent by the education of agricultural economists and their ability, by the readiness of farmers to ask for and to accept economic advice, by the research done in the field of agricultural economics, by the organization of extension and by the way it is financed".

Other papers deal with: *Agricultural Statistics—Their Status and Means of Improvement*; *Some Generalizations on Efficiency in Marketing, Based on Experience with Milk in Great Britain, 1938-52*; *Agricultural Efficiency and Rural Welfare*; *The Economic and Social Problems that Emerge in Carrying Through Land Reform*; *Interrelationships of the Social Sciences in Rural Welfare*; *The Impact of Full Employment on Agriculture and Industry*; *Recent Developments in International Trade Policy Affecting Agricultural Products*; *World Purchasing Power in Relation to Food Production*; *The Ambivalent Logic of Agricultural Control in the United States*; and *The Logic of National Policies for the Promotion or Regulation of Agricultural Production in Europe*.

In his paper on *Agricultural Efficiency and Rural Welfare*, T. W. Schultz divides the countries of the world into four classes: *Efficient and high in welfare*; *Sub-efficient and high in welfare*; *Efficient and low in welfare*; and *Sub-efficient and low in welfare*, and considers some of the influences which give rise to sub-efficiency within countries. The major points of his analysis of agricultural efficiency in its relation to rural welfare are summarized in one of his concluding remarks:

"A potent engine of sub-efficiency in agriculture in most Western countries arises from the malfunctioning of the factor markets that serve agriculture under conditions of rapid economic development. The resulting mal-allocation of resources between agriculture and other sectors is one of the major consequences of economic development. This kind of sub-efficiency does not exist presently in the under-developed countries but in all probability it will put in its appearance when such countries start up the road of substantial economic growth and development and for the same basic reasons. Much sub-efficiency in agriculture also arises from an inadequate allocation of resources to the 'production' of new techniques. This kind of mal-allocation is most pronounced in the under-developed countries, although as yet most Western countries, including the United States, allocate all too few resources to this important function."

A. E. Richards' (Economics Division, Canada Department of Agriculture) comprehensive review of *Recent Developments in International Trade Policy Affecting Agricultural Products* includes detailed comments on *The International Trade Organization*; *The General Agreement on Tariffs and Trade*; *Export Subsidies*; *Import and Export Restrictions*; *State Trading*; *The International Wheat Agreement*; *The General Agreement and the Wheat Agreement*; and on more recent developments such as: *The Cheese Amendment*; *Long term food contracts*; *Stockpiling*; *Three-country meat agreement*; and the *Triangular Grain Deal*.

All papers presented at the Conference showed the mark of painstaking research and most careful analysis. They will be of great value to economists, sociologists and other individuals concerned with food and population problems and to all people interested in an increased production and a better distribution of the products of agriculture within and among the various countries of the world.

THE ECONOMIC ANNALIST

A BIMONTHLY REVIEW OF AGRICULTURAL BUSINESS

G. P. BOUCHER, Editor

AUGUST 1954

Vol. XXIV, No. 4

CONTENTS

	Page
The Economic Situation.....	75
Marketing Margins for Food in Canada, 1949-1953..... G. E. Woollam	77
Trends in Food Expenditure Patterns in Canada..... B. A. MacDonald	78
Rail Distribution of Ontario Fruits and Vegetables.. W. C. Way	81
Farm Size and Tenure in Relation to Grade of Land, Regina Plains and the Vibank-Windthorst Area, Saskatchewan..... R. A. Stutt	84
Some Aspects of Farm Organization, Farm Practices and Prospects for Forage Production in West Central Manitoba..... R. C. Nicholson	90
Publications of the Economics Division.....	95
United Nations Publications.....	95
Other Publications.....	95

MARKETING SERVICE, ECONOMICS DIVISION

J. F. BOOTH, Chief

Published by Authority of the Right Honourable James G. Gardiner
Minister of Agriculture

ANNUAL AND MONTHLY INDEX NUMBERS

WHOLESALE PRICES, FARM PRICES AND LIVING COST INDEXES

Year	Wholesale Prices 1935-1939=100				Farm Prices of Agricultural Products 1935-39=100 (e)	Commodities and Services used by Farmers 1935-39=100		Cost of Living 1935-39=100		Consumer Price Index (1949=100) (j)
	(a) General Wholesale Index	(b) Farm Products	(c) Field Products	(d) Animal Products		(f) Equipment and Materials	(g) Eleven Factor Index	(h) Farm Living Costs	(i) Urban Living Costs	
1913.....	83.4					85.4		80.1	79.1	49.2
1914.....	85.4					90.2	85.3	82.3	79.7	49.6
1915.....	91.8					96.9	91.6	86.5	80.7	50.3
1916.....	109.8					101.7	100.5	93.7	87.0	54.2
1917.....	148.9					140.7	140.5	111.5	102.4	63.7
1918.....	166.0					164.1	160.2	131.1	115.6	72.0
1919.....	174.7					169.1	167.9	143.0	126.5	78.8
1920.....	203.2					190.1	186.5	171.3	145.4	90.5
1921.....	143.4					147.4	152.5	139.9	129.9	80.9
1922.....	126.8					124.6	134.1	127.9	120.4	74.9
1923.....	127.7					118.3	130.6	128.3	120.7	75.2
1924.....	129.5					122.3	131.9	125.5	118.8	74.0
1925.....	133.8					123.2	131.8	123.9	119.8	74.6
1926.....	130.3	144.4	158.5	130.2		119.9	130.6	121.1	121.8	75.9
1927.....	127.3	138.6	149.4	127.8		119.9	131.2	119.8	119.9	74.6
1928.....	125.6	136.3	134.3	138.2		118.3	129.3	118.5	120.5	75.0
1929.....	124.6	140.8	137.2	144.4		117.6	127.9	117.3	121.7	75.8
1930.....	112.9	119.5	105.8	133.3		105.6	117.0	113.7	120.8	75.3
1931.....	94.0	78.9	65.0	92.7		92.2	100.9	103.9	109.1	67.9
1932.....	86.9	65.5	60.4	70.5		89.3	93.3	97.8	99.0	61.7
1933.....	87.4	69.3	69.3	69.2		88.8	89.8	95.8	94.4	58.8
1934.....	93.4	83.5	80.5	86.5		96.8	95.5	97.9	95.6	59.6
1935.....	94.4	89.2	84.4	94.1	88.0	95.6	95.4	97.9	96.2	59.9
1936.....	96.7	97.9	102.2	93.7	96.9	98.7	98.1	98.3	98.1	61.1
1937.....	107.8	117.4	128.9	106.0	119.7	108.4	105.3	102.9	101.2	63.0
1938.....	102.0	102.9	100.9	104.8	105.0	101.2	101.7	101.9	102.2	63.7
1939.....	99.2	92.6	83.7	101.5	91.8	95.7	99.3	99.5	101.5	63.2
1940.....	108.0	96.1	85.4	106.7	96.8	101.8	106.8	108.5	105.6	65.7
1941.....	116.4	106.6	88.9	124.4	110.2	107.8	116.1	114.1	111.7	69.6
1942.....	123.0	127.1	109.7	144.6	133.1	119.2	131.6	119.0	117.0	72.9
1943.....	127.9	145.4	129.0	161.8	157.8	122.4	143.4	121.7	118.4	74.2
1944.....	130.6	155.3	144.5	166.1	172.4	126.0	148.0	122.8	118.9	74.6
1945.....	132.1	166.4	162.5	170.2	185.7	125.9	152.1	123.2	119.5	75.0
1946.....	138.9	179.5	177.9	181.2	204.1	128.0	157.0	127.1	123.6	77.5
1947.....	163.3	192.2	184.1	200.2	215.8	139.5	170.4	138.3	135.5	84.8
1948.....	193.4	232.1	200.6	263.7	255.8	173.1	197.4	162.8	155.0	97.0
1949.....	198.3	228.7	191.9	265.4	255.4	180.3	204.1	173.2	160.8	100.0
1950.....	211.2	236.7	191.9	281.4	260.8	189.9	210.4	177.6	166.5	102.9
1951.....	240.2	268.6	200.4	336.9	296.8	206.0	230.0	198.6	184.5	113.7
1952.....	226.0	249.0	220.5	277.5	274.5	215.8	243.1	210.0	187.5	116.5
1953.....	220.7	219.5	175.1	263.8	247.6	207.4	239.8	203.6	.....	115.5
1953										
Aug.....	222.2	213.6	157.2	269.9	240.3	206.3	243.6	204.9	186.4	115.7
Sept.....	221.2	208.9	154.0	263.7	235.6	.....	.....	.....	186.3	116.2
Oct.....	220.4	208.5	151.7	265.3	235.8	.....	.....	.....	.....	116.7
Nov.....	218.7	204.9	151.7	258.0	229.0	.....	.....	.....	.....	116.2
Dec.....	219.0	206.8	151.9	261.6	229.5	.....	.....	.....	.....	115.8
1954										
Jan.....	219.8	209.4	152.5	266.3	233.1	204.0	231.1	204.8	.....	115.7
Feb.....	219.0	208.8	152.9	264.7	233.8	.....	.....	.....	.....	115.7
Mar.....	218.6	206.7	151.3	262.0	232.6	.....	.....	.....	.....	115.5
Apr.....	217.9	205.5	150.6	260.4	231.0	204.1	238.0	204.2	.....	115.6
May.....	218.2	209.6	151.2	268.0	232.8	.....	.....	.....	.....	115.5
June.....	217.8	209.6	151.9	269.3	.....	.....	.....	.....	.....	116.1

(a) Canada. Dominion Bureau of Statistics, Labour and Prices Division. *Prices and Price Indexes*. (Mimeo.) Ottawa, Monthly.

(b) Ibid. (a). Wholesale prices of products of Canadian farms.

(c) Ibid. (a). Wholesale prices of grains, hay, tobacco and potatoes.

(d) Ibid. (a). Wholesale prices of animals and animal products.

(e) Canada. Dominion Bureau of Statistics, Agriculture Division. *Index Numbers Farm Prices of Agricultural Products*. (Mimeo.) Ottawa, Monthly.

(f) Canada. Dominion Bureau of Statistics, Labour and Prices Division. *Price Index Numbers of Commodities and Services Used by Farmers*. (Mimeo.) Ottawa, Jan., Apr. and Aug. Includes prices of commodities in 8 groups including farm implements, building materials, gasoline, oil and grease, feed, fertilizer, binder twine, seed and hardware.

(g) Ibid. (f). Includes the 8 commodities indicated above plus tax rates, interest rates and farm wage rates.

(h) *Price Index Numbers of Commodities and Services used by Farmers*. Includes food, clothing, fuel, household equipment, health, maintenance and miscellaneous.

(i) *Prices and Price Indexes*. Includes food, rent, fuel and lighting, clothing, home furnishings and services, miscellaneous and retail prices of commodities.

(j) Canada. Dominion Bureau of Statistics, Labour and Prices Division. *Price Movements*. (Mimeo.) Ottawa Monthly.

THE ECONOMIC SITUATION

Consumer Prices.—The consumer price index advanced from 115.5 to 116.1 between May 1 and June 1, a slightly larger increase than was recorded between the same dates in 1953. The 1954 rise was almost entirely attributable to an advance in the food index. Among other groups, shelter was the only one to advance.

Farm Prices.—The index number of farm prices of agricultural products for Canada (Newfoundland excluded) rose from 231.0 in April to 232.8 in May, mainly as a result of higher prices for livestock and potatoes which more than offset lower prices for dairy products, poultry and eggs. The advance in May followed successive declines in March and April from February when the index was 233.8.

Prices of Commodities and Services Used by Farmers.—The all-Canada composite price index for commodities and services used by farmers, including farm living costs and farmers' expenses increased between January and April but was still below the level for April 1953. The index advanced from 220.6 in January to 224.5 in April, mainly as a result of higher farm wage rates in Western Canada. The current index however is 1.1 per cent below the level of 227.0 in April 1953. Exclusive of living costs the composite index rose three per cent to 238.0 between January and April but declined 1.9 per cent from April 1953.

The index of farm family living costs was 204.2 for April, 0.3 per cent below the January level but 0.4 per cent above the April 1953 level.

Grains.—On July 12 the Minister of Trade and Commerce announced that provision was "being made for the full delivery of the general quota of 7 bushels per specified acre at all delivery points in the Prairie Provinces by July 31st." He stated that producers' marketings of all grains during the 1953-54 crop year had then exceeded 525 million bushels and that these marketings could range from 575 to 600 million bushels before the end of the crop year on July 31.

Marketings during this crop year, although smaller than those in the 1952-53 record year, will be among the largest in history.

On July 16 the Minister of Trade and Commerce also announced that there "will be no change in the level of initial prices to be paid western producers by the Canadian Wheat Board for basic grades of wheat, oats and barley during the crop year commencing on August 1st, 1954."

The initial prices for the crop year 1954-55 are as follows:

Wheat—(No. 1 Northern wheat, basis in store Fort William/Port Arthur or Vancouver), \$1.40 per bushel.
Oats —(No. 2 Canada Western oats basis in store Fort William/Port Arthur), 65 cents per bushel.
Barley—(No. 3 C.W. 6-Row barley basis in store Fort William/Port Arthur), 96 cents per bushel.

After the start of the new crop year the Canadian Wheat Board will announce initial payments for other grades of wheat, oats and barley.

Wheat Supplies and Exports.—Wheat supplies remaining for export and carry-over at the end of their respective crop years in the four major wheat exporting countries amounted to 1,725 million bushels about June 1, compared with 1,232 million a year previously. Estimated supplies in each of the four countries on June 1, in millions of bushels, (1953 figures in brackets) were as follows: United States, 878.0 (574.3); Canada, 614.5 (457.2); Australia, 132.5 (79.0); and the Argentine 99.8 (121.6).

Total exports of wheat and wheat flour from these four countries in the August-May period of the current Canadian crop year amounted to 525 million bushels or 23 per cent less than the 631.5 million bushels exported in the previous corresponding period. Exports from Canada declined from 297.5 to 208.7 million bushels, United States exports from 279.9 to 169.9 million and those from Australia from 84.8 to 52.3 million bushels, whereas Argentina's exports rose from 19.2 to 94.1 million bushels.

Canadian exports have declined about 30 per cent and those from the United States and Australia by about 39 and 38 per cent respectively. Reduced shipments from these three countries have been offset only in part by the sharp increase (390 per cent) from the

very low level of shipments from Argentina during the August-May 1952-53 period.

Canada's share of the total exports from these four countries has remained relatively constant between the two periods, having only declined from 43.7 to 39.8 per cent. The United States' share dropped from 41.1 to 32.4 per cent and Australia's share from 12.4 to 10.0 per cent. Reflecting an improved supply position Argentina's share increased from 2.8 to 17.9 per cent.

Dairy Products.—More creamery butter, cheddar cheese, ice cream and concentrated milk products were made in June and in the first six months of this year than in the corresponding periods of 1953. Domestic disappearance of creamery butter and ice cream also increased during the January-June period of 1954.

The output of creamery butter rose one per cent from 46.2 million pounds in June 1953 to 46.5 million pounds in June 1954 and domestic disappearance increased five per cent from 23.2 to 24.4 million pounds. Production in the January-June period increased two per cent from 136.5 million pounds in 1953 to

139.7 million pounds in 1954, and domestic disappearance, five per cent, from 130.2 to 136.7 million pounds. The June output of cheddar cheese increased from 12.2 million pounds in 1953 to 13.6 million in 1954, an increase of 11 per cent, and the January-June output rose from 33.1 to 33.4 million pounds, an increase of one per cent.

The output of process cheese rose from 20.1 million pounds in January-June 1953 to 22 million in January-June 1954, an increase of six per cent, despite a decline of 11 per cent from 3.3 million pounds in June 1953 to three million pounds in June this year.

Production of concentrated milk products rose one per cent from 62.8 million pounds in June 1953 to 63.1 million in June 1954, and two per cent from 221.3 million pounds in January-June 1953 to 225.1 million pounds in the corresponding period of 1954.

The output of whole milk products was about the same in June this year as in June last year and three per cent higher in the first half of 1954 than in the first half of 1953; more whole milk powder and evaporated milk, but much less condensed milk, were produced.

CORRIGENDA

In *Financing Farming in Canada* by S. C. Hudson, in the June 1954 issue, on page 56, paragraph 2, *delete* the last part of the paragraph from "First mortgage loans..." on line 9 and *substitute*:

Before 1953 first mortgage loans were made up to 65 per cent of the value of land and buildings and up to 75 per cent when a farm was purchased by a young man starting farming or when debts were consolidated by mutual agreement between debtor and creditor.

The Office now grants first mortgage loans up to 75 per cent of the value of the farm but in no case does a loan exceed \$7,000. The borrower may repay his loan over a period of 39½ or 25 years. Under the first plan the rate of interest is 2½ per cent, to be paid in two annual instalments, and the amortization rate is 1½ per cent. Repayment of principal and interest is made on the basis of two semi-annual payments of \$20 on each \$1,000 loaned.

Under the 25-year plan the interest rate is three per cent and the amortization rate 2.714 per cent per year. The annual repayment (principal and interest) amounts to \$57.14 for each \$1,000 loaned and is made in two semi-annual payments of \$28.57. The interest rate on arrears is 5 per cent. If the borrower so desires he may repay part or all of his loan at any time. Most of the loans are made under the 39½-year plan.

On page 56, paragraph 5, *delete* from ... "77 per cent had sales ..." in line 2 to the end of line 4 inclusive, and *substitute* ... 63 per cent had sales of farm products in 1950 averaging less than \$2,500 per farm. The remaining 37 per cent of these rural holdings accounted for over 77 per cent of the value of farm products reaching the market."

MARKETING MARGINS FOR FOOD IN CANADA, 1949-1953

G. E. WOOLLAM

Canadian consumers in the past few years have been purchasing food at an annual rate of about \$3.5 billion; about three-quarters of this amount was spent for foods which originated on Canadian farms. The raw product from the farm, however, undergoes varying degrees of change, depending on the product, before finally reaching the consumer. It is estimated that about half of the retail value of food originating on Canadian farms is absorbed in transforming the product and in placing it in the hands of the consumer, whereas the other half goes to the farmer for his production. Thus the returns to farmers from the sale of food to Canadian consumers provide a large part of total farm income, probably about one-half in recent years.

Table 1.—Changes in Food Prices, Marketing Costs and Farm Share of the Consumer's Dollar (1949=100)

Period	Food Index	Marketing Costs	Farm Share of the Consumer's Dollar
1949.....	100.0	100.0	100.0
1950.....	102.6	102.8	99.8
1951.....	117.0	110.8	101.9
1952.....	116.8	122.9	98.9
1953.....	112.6	116.1	95.2

The costs of marketing farm products are closely related to the general level of wages and material costs in Canada and are somewhat affected by the volume of sales. Farm prices, on the other hand, are related not only to the general price level in this country but also reflect production in both this and other countries. The export markets exert a strong influence on the determination of farm prices. Because marketing costs are more rigid than farm prices, changes in prices at retail are readily reflected in the proportion of the retail dollar that is received at the farm.

The relationship between retail food prices, marketing costs and the farm share of the consumer's dollar is illustrated in Table 1. It should be remembered in making comparisons that the food index includes a large number of items which are not produced on Canadian farms. Moreover, changes in marketing costs and the farm share of the consumer's dollar are based on only 12 products and these account for about one-half of the total weights in the food index. However, Table 1 should indicate general trends and year-to-year changes.

Table 2.—Relation of Marketing Costs to Changes in Wages and Salaries and Costs of Industrial Materials (1949=100)

Period	Marketing Costs	Wages and Salaries	Cost of Industrial Materials
1949.....	100.0	100.0	100.0
1950.....	102.8	107.3	112.2
1951.....	110.8	119.0	135.8
1952.....	122.9	130.3	115.9
1953.....	116.1	137.0	106.6

Table 3.—Average Annual Marketing Margins, 12 Selected Commodities, Canada, 1949 to 1953.

Commodity	Unit	1949	1950	1951	1952	1953
—cents per unit—						
Wheat Flour.....	lb.....	4.1	4.3	4.4	4.4	4.6
White Bread.....	lb.....	8.1	8.5	9.6	10.1	10.2
Beef, Good Quality ^a	lb.....	23.3	25.9	29.2	30.1	26.3
Eggs, A Large.....	doz.....	13.0	14.1	15.7	15.9	17.0
Fluid Milk.....	qt.....	7.9	8.2	9.0	9.8	9.9
Creamery Butter.....	lb.....	15.3	14.2	14.2	15.5	15.0
Cheese, Plain Process.....	$\frac{1}{2}$ lb. pkg.....	19.0	19.7	21.0	24.8	24.1
Potatoes.....	10 lb.....	26.3	26.5	24.3	36.2	34.6
Canned Peaches.....	15 oz. tin.....	16.3	16.0	17.4	17.2	15.9
Canned Tomatoes.....	28 oz. tin.....	15.9	13.7	18.6	23.3	18.5
Canned Corn.....	20 oz. tin.....	16.2	14.8	15.8	16.6	15.2
Canned Peas.....	20 oz. tin.....	14.5	14.1	15.2	16.6	16.9

^a Ontario only

In Table 2, two of the major items affecting marketing costs are shown with the estimates of marketing costs. In addition, freight rates during this period rose considerably, increasing about 12 per cent in 1950, an additional 12 per cent in 1951, five per cent in 1952 and 16 per cent in 1953.

Table 4.—Farm Share of the Consumer's Dollar as a Percentage of the Retail Price, 12 Selected Commodities, Canada, 1949 to 1953

Commodity	1949	1950	1951	1952	1953
—per cent—					
Wheat Flour.....	44	41	40	40	39
White Bread.....	18	17	15	15	15
Beef, Good Quality.....	62	65	67	61	58
Eggs, A Large.....	79	75	78	72	75
Fluid Milk.....	56	55	54	54	53
Creamery Butter.....	76	76	79	77	77
Cheese, Plain Process.....	35	32	35	27	27
Potatoes.....	50	47	53	65	41
Canned Peaches.....	21	21	20	20	21
Canned Tomatoes.....	21	22	20	19	24
Canned Corn.....	15	15	14	15	17
Canned Peas.....	18	19	19	19	20

Estimates of marketing margins and of the farm share of the consumer's dollar for selected commodities are presented in Tables 3 and 4, respectively. The methods used in calculating this data were designed to measure changes from year to year and do not necessarily represent an accurate measure of the actual margin; however, they are considered significant in measuring year-to-year changes.

TRENDS IN FOOD EXPENDITURE PATTERNS IN CANADA

B. A. MACDONALD

Since 1935 food expenditure as a percentage of total disposable income in Canada has shown only minor changes. The most notable changes occurred during the war period, 1939-1945, when controlled food prices enabled consumers to fill their food needs with a smaller proportion of their increasing incomes. With decontrol there came a return to the prewar situation.

Table 1.—Food Expenditures: Total, per Capita and as a Percentage of Disposable Income in Canada, Selected Years, 1935 to 1953

Year	Total	Per Capita	Percentage of Disposable Income
	million dollars	dollars	per cent
1935	791	156.5	24.0
1940	1,055	178.3	21.9
1945	1,885	238.4	22.4
1950	3,039	216.0	24.0
1951	3,515	214.4	23.9
1952	3,683	218.5	23.4
1953	3,755	254.0	22.6

What is striking, however, is the apparent difference in the quality and quantity of foods going into the Canadian diet. The food index component of the Consumer Price Index is intended to show how much it costs at a given time to purchase a specific quantity of certain foods. The quantities and types of foods are those which were most important in the budgets of urban families of two to six persons within a certain income range in 1949. Nonetheless, there is considerable validity in the assumption that the food index reflects quite

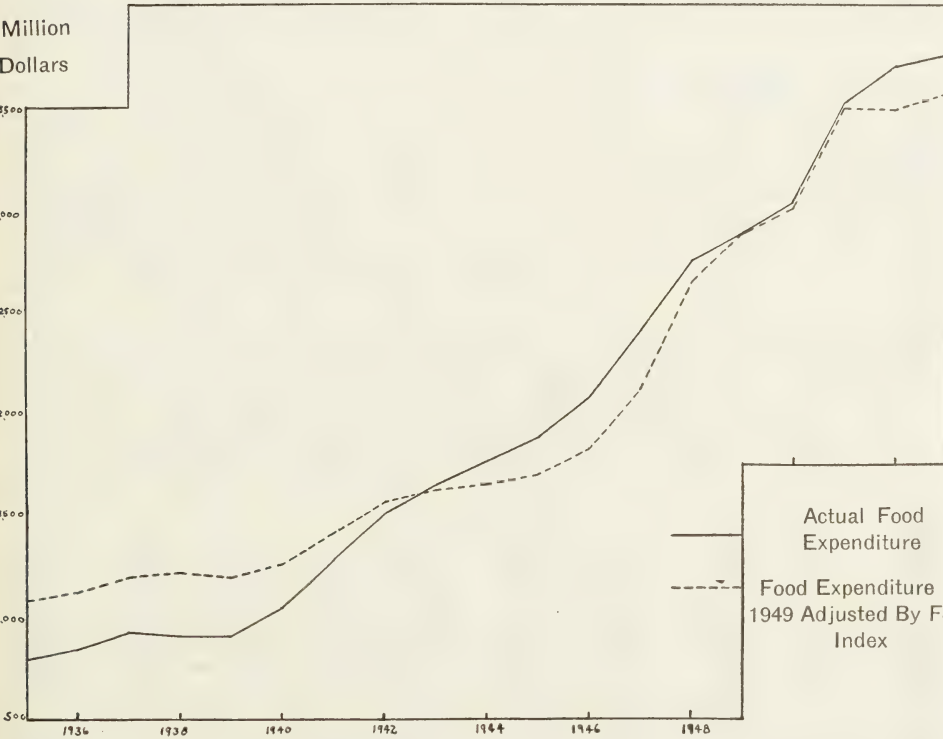


Figure 1—Comparison of 1949 food expenditure with actual food expenditure, 1935-1953.

closely the changes in the prices of all foods purchased by all consumers. One may then expect an almost perfect relationship between variations in the food index and variations in the total amount spent for food—except for changes in the components of the diet.

In Figure 1 actual food expenditure in selected years between 1935 and 1953 are compared with the estimated cost of the 1949 food basket for each of these years. This estimate was based on 1949 food expenditure adjusted for differences in food prices and human population for each of these years. The discrepancies between the two measures are too great at certain points to be accounted for by the fact that the food index is of limited reference. It is apparent that Canadians are purchasing greater quantities of better quality food now than they were in the 1935-1939 period as the 1949 food basket would have, in the prewar years, cost much more than the actual amount spent for food in those years. There is also a noticeable divergence between the two measures since 1950 with actual food expenditures running above the cost of the 1949 food basket at present prices. The year 1950 marked the beginning of a decline in the general level of food prices. This would suggest that consumers have continued to change their food expenditure patterns to include greater quantities and/or a better quality of food. For example, a consumer who buys hamburger at 45 cents rather than steak at 90 cents may well tend to buy steak at 70 cents when hamburger is 35 cents even though the relative

Table 2.—Quantities of Selected Foods Purchasable with One Hour's Industrial Wages, 1939 and 1944-53

Year	Bread	Flour	Milk	Butter	Cheese	Round Steak	Blade Roast
	24 oz. loaves	pounds	quarts	—pounds—			
1939.....	5.2	13.8	4.4	1.7	1.8	2.1	2.9
1944.....	7.1	17.2	6.9	1.8	1.7	1.9	2.6
1945.....	7.0	17.3	6.7	1.8	1.7	1.8	2.7
1946.....	7.1	17.5	5.7	1.6	1.6	1.7	2.7
1947.....	7.4	17.9	5.3	1.5	1.7	1.8	2.8
1948.....	6.8	15.0	5.1	1.3	1.6	1.6	2.2
1949.....	6.7	14.1	5.5	1.5	1.7	1.5	2.0
1950.....	6.7	14.2	5.7	1.7	1.8	1.3	1.8
1951.....	6.8	15.8	6.0	1.7	1.8	1.2	1.6
1952.....	7.3	17.4	6.1	2.0	1.9	1.4	2.0
1953.....	7.5	17.9	6.4	2.1	2.1	1.8	2.6

Year	Pork Loin	Bacon	Peaches	Peas	Tomatoes	Eggs	Potatoes
	—pounds—		15 oz. tins	20 oz. tins	28 oz. tins	dozens	10 lb. bags
1939.....	1.8	1.4	3.4	3.6	4.6	1.4	2.2
1944.....	1.9	1.4	4.7	4.8	5.2	1.6	2.3
1945.....	1.8	1.3	4.7	4.8	5.1	1.5	2.0
1946.....	1.7	1.2	4.4	4.7	4.9	1.4	2.0
1947.....	1.7	1.2	4.1	4.9	4.4	1.6	2.4
1948.....	1.6	1.1	4.1	5.0	3.7	1.5	2.3
1949.....	1.5	1.2	4.8	5.6	4.9	1.6	2.8
1950.....	1.6	1.3	5.1	6.0	5.9	1.8	3.1
1951.....	1.6	1.4	5.4	6.2	5.1	1.6	3.4
1952.....	2.0	1.9	6.0	6.3	4.5	2.2	1.9
1953.....	1.9	1.6	6.7	6.4	5.6	2.0	3.5

prices of the two products are the same in both cases. On the other hand, either increased income or lower prices may induce the consumer to eat more food than previously.

Rising incomes and declining food prices during the past few years have enabled the consumer to raise his standards of food purchases. Table 2 shows the amounts of various foods that can be purchased by an industrial worker with one hour's earnings. This is computed by dividing the average hourly earnings in manufacturing by the average annual prices of these selected food items. This gives a set of what might be called "wage-food equivalents", the number of units of certain foods that may be purchased with the return from one hour's work.

It will be seen that these equivalents, with two exceptions, have changed in favour of the wage earners since 1939, indicating that wages in manufacturing have been rising at a greater rate than have food prices. The exceptions are meats, where the equivalents have changed little or are actually greater in 1953 than in 1939. In the present year, however, retail meat prices have been comparatively low whereas average hourly components have continued to show increases. It seems possible, therefore, that the 1953 wage-food equivalents for meat will rise above those for 1939.

RAIL DISTRIBUTION OF ONTARIO FRUITS AND VEGETABLES

W. C. WAY

Since the first of a succession of post-war general freight rate increases in April 1948, annual railway carlot unloads of Ontario fruits and vegetables in 19 Canadian cities have decreased from about five thousand to three thousand cars in 1953 (Table 1). In contrast to this decreasing rail traffic, production of most commercial fruits in southwestern Ontario has almost doubled in the seven year period, 1947-53, and vegetable production has also increased to some extent. The explanation of these two opposite trends is that truck transportation is playing an increasingly prominent role in the marketing of these commodities. Representatives of the fruit and vegetable industry have suggested that the increased cost of rail transportation has disturbed the entire system of distribution of Ontario produce.

Table 1.—Carlot Unloads of Ontario Fresh Fruits and Vegetables on 19 Canadian Markets, 1947-1953.

Year	Montreal, Quebec City, and Ottawa			16 Other Cities ^a			Total		
	Fruits	Vegetables	Total	Fruits	Vegetables	Total	Fruits	Vegetables	Total
—number of cars—									
1947....	1,040	1,542	2,582	508	651	1,159	1,548	2,193	3,741
1948....	1,541	1,892	3,433	513	870	1,383	2,054	2,762	4,816
1949....	1,651	1,553	3,204	535	895	1,430	2,186	2,448	4,634
1950....	1,139	1,288	2,427	394	600	994	1,533	1,888	3,421
1951....	1,273	1,411	2,684	539	794	1,333	1,812	2,205	4,017
1952....	1,433	1,024	2,457	386	685	1,071	1,819	1,709	3,528
1953....	1,083	888	1,971	218	593	811	1,301	1,481	2,782

^a Sydney, Halifax, Saint John, Toronto, Hamilton, London, Windsor, Winnipeg, Regina, Moose Jaw, Saskatoon, Edmonton, Medicine Hat, Lethbridge, Calgary and Vancouver.

Source: Annual Unload Reports Fresh Fruits and Vegetables on 19 Canadian Markets. Dept. of Agriculture, Ottawa, 1947 to 1953.

A study of railway freight rates on all fruits and vegetables from the St. Catharines and Leamington production areas to the selected 19 Canadian cities was made to determine the changes in transportation charges during this seven year period, 1947-53. Receipts of railway carlots of Ontario fresh fruits and vegetables on these Canadian markets were also studied to determine the changes in the volume of distribution by rail. No comparable data on truck charges or movements were available for this period.

Railway freight transportation charges are determined by multiplying the freight rate, in cents per hundred pounds, and the quantity, in pounds, of goods transported. Extra charges for special services, such as icing, heating, or demurrage, are additional costs to the shipper or consignee. Tariffs of class and special commodity rates are published by the railways for every kind of shipment. These rates may be a direct or applicable charge for the transportation of goods from any station or origin to any destination or on a mileage basis. Since there may be several freight rates seemingly available on a single shipment, the applicable rate is determined under the conditions of railway rules and regulations covering the particular movement. Whenever a choice of rates is available, the lowest rate prevails.

Under railway class rates, all types of goods moved as freight are grouped under 10 classifications. In carload movement fruits are generally class 3 or 5 and vegetables are class 5 or 8. The freight rate per hundred-pound unit increases with a higher class rating, i.e., class 1 is higher than class 2 . . . class 9 is higher than class 10. Generally, the more perishable the product transported the higher is the freight rate, whether under class or commodity tariff of rates.

Commodity freight rates are lower than class rates and are designed to meet other competitive transportation rates or to encourage rail traffic. Commodity rates are published in particular tariffs for selected products to and from selected stations or on a mileage basis. These rates are generally available on such principal horticultural products as apples, pears, potatoes, and onions, as well as fruits and vegetables as a group. In selected areas special low commodity rates are often made available to meet competitive motor and water transportation rates.

From April 7, 1948 to November 15, 1953, class freight rates within eastern Canada had been increased 98 per cent but class rates applying from eastern to western Canada or vice versa had been increased only about 82 per cent. However, seasonal commodity freight rates on fruits and vegetables from the Niagara peninsula to many Ontario and Quebec cities and towns have not been increased since September 15, 1948.

Entirely unrelated to the general freight rate increases, postwar increases in express rates have generally been limited to less than 50 per cent of the basic rates effective May 1, 1949. Soft fruits are commonly shipped by express when higher seasonal market prices warrant the higher cost of this service. By using express the shipper is usually assured fast and scheduled delivery and a better condition of the perishable produce on arrival.

The main movement of Ontario produce by rail is to Montreal, Ottawa, and Quebec City. These three cities received 75 per cent of the total carlot unloads of Ontario fruits and 65 per cent of Ontario vegetables at all 19 Canadian cities during the seven year period (Table 2). The trend of unloads during this period was downward, with vegetable unloads decreasing more sharply than fruits. Most vegetables were shipped from the Leamington and Bradford areas from which points freight rates were increased the full 98 per cent. Express movements of vegetables to Montreal and Ottawa represented about a third of the total rail movement and decreased in about the same proportion as the freight movement during the period studied. Most fruits were shipped from the Niagara peninsula from which points freight rates

during the seasonal shipping period April 15 to November 30 have not been increased since September 15, 1948. These same rates prevail again in 1954. Of the Ontario fruits annually unloaded by the railways on the 19 markets almost 95 per cent were moved to market during this seasonal period. While these freight rates have not been increased, the number of freight carlot unloads of fruit at Ottawa, Montreal and Quebec City has decreased. Express movements of fruit to Ottawa and Montreal represent over 60 per cent of the rail movements. The decrease in the number of carlot unloads of expressed fruit to these two markets during the period 1948-53 is much greater than the decrease in movements by freight. Higher freight and express rates on fruits and vegetables have affected the downturn of rail movements to these cities but freight movements on fruits from and to points where rates have remained unchanged have also declined. Transportation charges are an important factor influencing the decline of transportation by rail but other factors favoring highway transport are also important, such as speed in delivery, convenience of door-to-door delivery, less handling and specialized individual small fruit and vegetable shipments.

Table 2.—Area Carlot Unloads of Ontario Fresh Fruits and Vegetables as a Percentage of Total Unloads on 19 Canadian Markets, 1947-1953

Year	Sydney Halifax Saint John	Quebec City Montreal Ottawa	Toronto Hamilton London Windsor	Winnipeg	Regina Moose Jaw Saskatoon	Edmonton Calgary Medicine Hat Lethbridge Vancouver	Total
—number of cars—							
1947.....	13	69	9	5	2	2	100
1948.....	15	71	6	4	2	2	100
1949.....	11	70	7	7	2	3	100
1950.....	14	71	4	7	2	2	100
1951.....	15	67	5	8	3	2	100
1952.....	17	70	4	6	2	1	100
1953.....	19	71	3	4	2	1	100
Average 1947-53.....	15	70	6	6	2	2	100

The number of railway unloads of Ontario fruits and vegetables on the Toronto and Windsor markets has decreased from several hundred in 1947 to less than a hundred in 1953. Unloads at Hamilton and London were negligible. Obviously these four markets received their supplies by truck. In 1953 truck receipts of fruits and vegetables at Toronto exceeded the rail receipts at Montreal. Also, truck receipts at Ottawa in 1953 exceeded railway receipts. As these cities are large consuming centres, these truck and rail receipts indicate the predominance of truck transportation. In recent years trucking service has been extended from a general 200-mile limit to over 500 miles. Today, fruits and vegetables are frequently trucked long distances; for example, from southwestern Ontario to the Prairie Provinces. Highway transportation of fruits and vegetables in recent years has undoubtedly grown with the increase in the number of trucking services available and the technological improvements in vehicles and highways, as well as maintenance by truckers of transportation charges competitive with railway rates.

Increased freight and express rates have not adversely affected the volume of Ontario fruits and vegetables marketed in the Maritime Provinces during the seven year period. More Ontario vegetables were shipped to the markets of Sydney, Halifax and Saint John in recent years than in the earlier years of

the period. These markets received 13 per cent in 1947 and 19 per cent in 1953 of the total unloads of Ontario produce on the 19 Canadian markets (Table 2).

Railway carlot unloads of Ontario produce on the nine western markets have declined during the period under study. The total unloads in western Canada were almost equivalent to those in Quebec City, except in 1953 when unloads in the western markets were almost half the number in 1952. While truck movements to the Prairie Provinces have increased in recent years, the volume of fruits and vegetables so moved is still negligible compared to railway movements. The downward shift of rail movements is undoubtedly partly due to higher transportation costs, but altering market conditions are also an important factor. In 1949 and 1951 the number of unloads was greater than in other years of the seven-year period, and in 1950 and 1952 unloads were comparable to those in 1947, the year before freight rate increases began. A general percentage increase in these east-west freight and express rates is much more significant than on the lower local rates and, therefore, increased transportation cost in this case is an important factor disturbing the distribution of Ontario produce in western Canada.

The suggestion that the higher cost of rail transportation in the past seven years was caused by increased freight rates has been a main factor in shifting the movement of fruits and vegetables from rail to highway carrier is not substantiated by this study. Increased freight rates are, no doubt, an important factor. However, where freight rates have not been increased, railway freight traffic has declined.

FARM SIZE AND TENURE IN RELATION TO GRADE OF LAND, REGINA PLAINS AND THE VIBANK-WINDTHORST AREA, SASKATCHEWAN

R. A. STUTT

An economic study, carried on in 1951, by the Economics Division extended its land classification program into a block of 17 municipal units in the South Central and Southeastern portion of the Province.

This classification is based on the capacity of the land to produce wheat, which is considered to be the highest and best use of prairie lands. Historical data on long-time wheat yields were obtained from a sample of 183 farmers in the area in order to assist in the indexing of each parcel of land. This sample was supplemented by 54 records which provided wheat yield data for periods of ten or more years. Aerial photographs were studied to determine the arability of each parcel.

A study of farm practices in the Weyburn loam and Regina heavy clay soils¹ was also carried on in 1951 in conjunction with the classification of the land. The purpose of this farm practices study was to find the factors significantly related to higher yields. A sample of 167 records was obtained from farmers in the first area and 161 records from farmers in the second area.

The following municipalities were included in the entire survey:

Golden West	No. 95	Lajord	No. 128
Fillmore	No. 96	Bratt's Lake	No. 129
Wellington	No. 97	Redburn	No. 130
Scott	No. 98	South Qu'Appelle	No. 157
Caledonia	No. 99	Edenwold	No. 158
Chester	No. 125	Sherwood	No. 159
Montmartre	No. 126	Pense	No. 160
Francis	No. 127	Moose Jaw	No. 161
		Lumsden	No. 189

¹ *Farm Practices in the Weyburn Loam and Regina Heavy Clay Soils of Saskatchewan*. Ragush, M. and F. F. Cline. Economics Div. in co-operation with the Dept. of Farm Management, University of Saskatchewan. Processed bul. Ottawa, September 1953. p. 27.

Table 1.—Land Classification, Regina Plains and the Vibank-Windthorst Area.

Land Class	Area	
	acres	per cent
I (submarginal for wheat production).....	559,314	15.6
II (marginal for wheat production).....	882,450	24.6
III (fair wheat land).....	668,099	18.6
IV (good wheat land).....	285,663	8.0
V (excellent wheat land).....	1,188,983	33.2
Total	3,584,509	100.0

The Land.—The Regina Plains, which are made up mainly of heavy clay soils, constitute a large part of the study area. The other main soil type is the Weyburn loam found in the eastern section. These lands cover a total area of 3,584,509 acres, of which only 559,314 acres have been classified as submarginal for wheat production (Table 1). In six municipal units at least two-thirds of the total land area qualified as Land Class V, or excellent wheat land. These were: (1) R. M. Scott No. 98; (2) Lajord No. 128; (3) Bratt's Lake No. 129; (4) Sherwood No. 159; (5) Pense No. 160; and (6) Moose Jaw No. 161. In one municipal unit—Bratt's Lake No. 129—96.4 per cent of the land was classified as Land Class V. On the other hand, there were eight municipal units in which at least one-half of the total land area graded Land Class I (submarginal for wheat production) or Land Class

Table 2.—Land Classification, Brown and Dark Brown Soil Zones, Saskatchewan.

Land Class	Brown Soil Zone		Dark Brown Soil Zone	
	million acres	per cent	million acres	per cent
I.....	9.8	45.4	4.7	27.0
II.....	3.8	17.7	5.1	29.0
III.....	4.9	22.5	4.8	27.6
IV.....	2.3	10.7	1.2	6.7
V.....	0.8	3.7	1.7	9.7
Total	21.6	100.0	17.5	100.0

II (marginal for wheat production): (1) Golden West No. 95; (2) Fillmore No. 96; (3) Wellington No. 97; (4) Caledonia No. 99; (5) Chester No. 125; (6) Montmartre No. 126; (7) Francis No. 127; and (8) South Qu'Appelle No. 157. In three of these municipal units Land Classes I and II together made up at least two-thirds of the total land area. These units were: (1) Fillmore No. 96; (2) Chester No. 125; and (3) Montmartre No. 126.

The area is distinctly better, in its proportion of higher grades of land, grade than the entire Dark Brown soil zone in which it is located. The land classification

Table 3.—Sizes of Farms in Various Land Classes, Regina Plains and the Vibank-Windthorst Area

Land Class	Assessed Acreage		
	Average per farm	Average acreage in improved land	Improved land as a percentage of the total
	acres	acres	per cent
I.....	735	299	40.7
II.....	592	397	67.1
III.....	572	433	75.7
IV.....	600	528	88.0
V.....	692	667	96.4

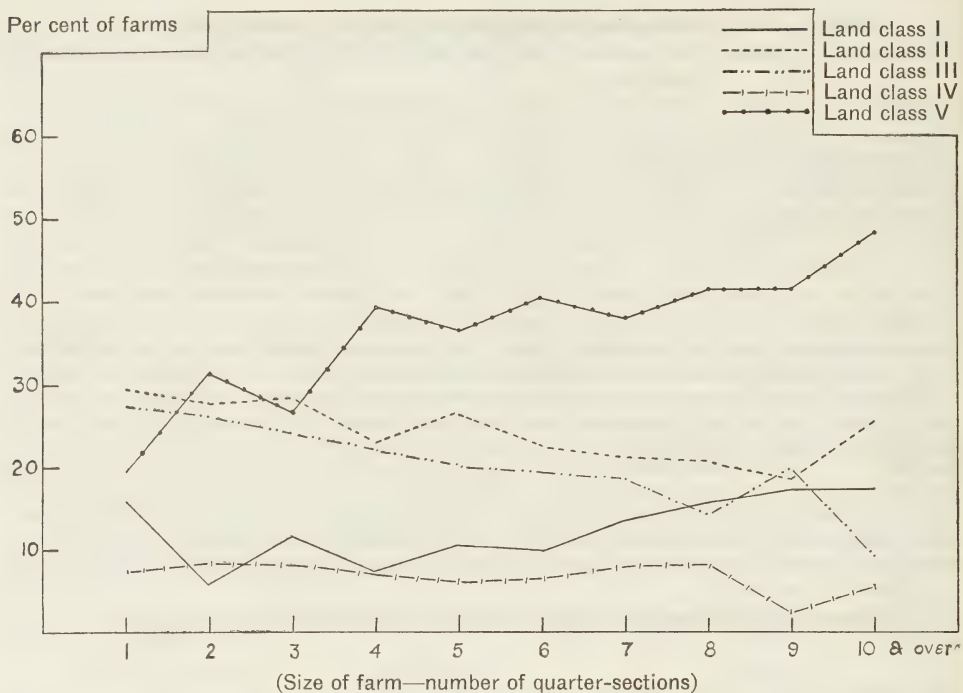


Figure 1—Proportion of farms in each size group according to predominant land class.

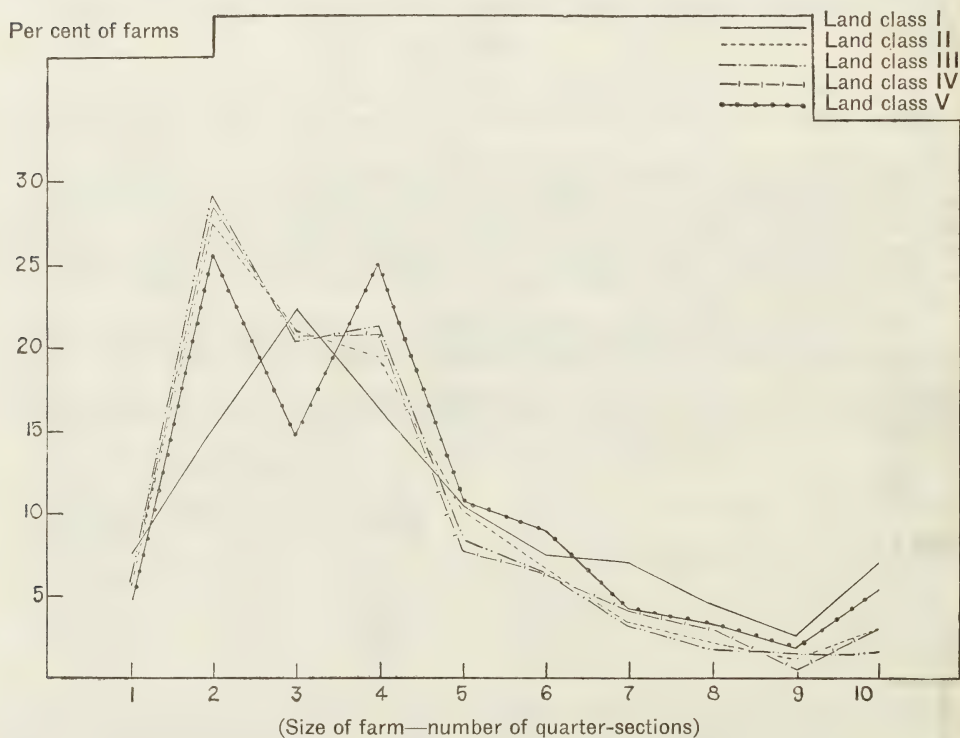


Figure 2—Distribution of farms according to size and predominant land class.

is now completed for both the Brown and Dark Brown zones which form most of the open plains region of the Province. The proportion of land in each class for the two zones is shown in Table 2.

Number of Farms.—At the time of the study a complete occupancy record was obtained from the municipal secretary, members of the council or other well-informed persons in the area. This information related to the tenure status, that is, the ownership of each parcel of land and the manner in which this land was held by the farm operator. The land pattern was ascertained from aerial photographs which indicated the area of improved land per quarter section. Additional information on land features such as stoniness, alkalinity, topography and arability was obtained from the assessor's field sheets of the Saskatchewan Assessment Commission and was used in the final grading of land to indicate its economic potentialities.

A total of 5,273 farm units with headquarters within the area was included in the occupancy analysis. Some of the land within the area was, of course, farmed by operators with headquarters in bordering municipalities. Slightly more than

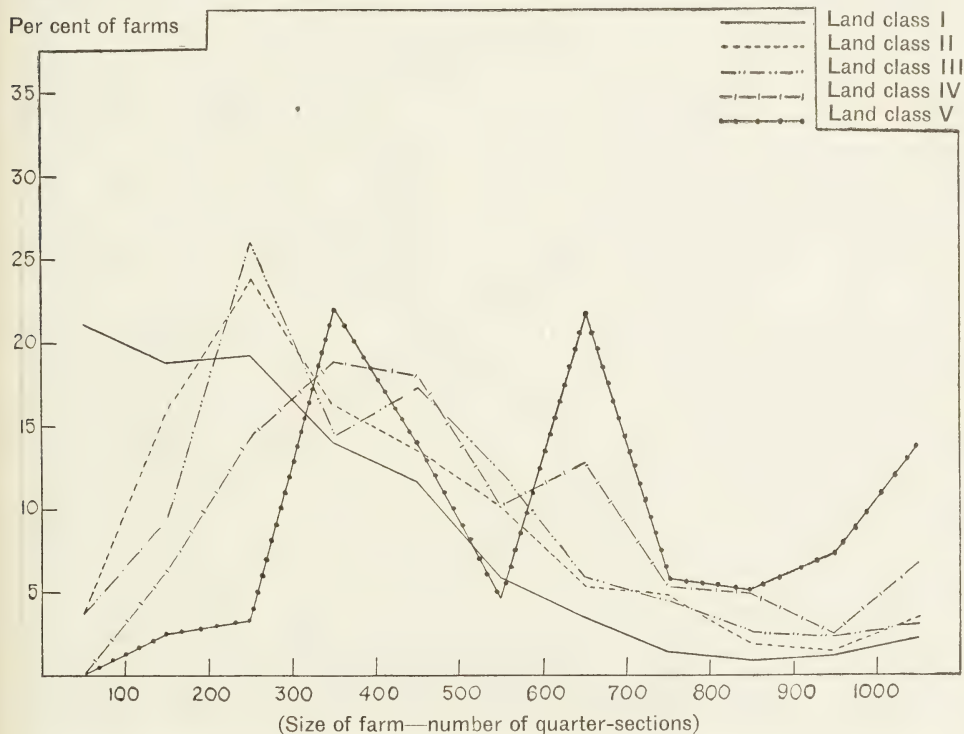


Figure 3—Distribution of farms according to improved acreage and predominant land class.

one-third (34.3 per cent) or 1,811 of the farms were located on land, most of which graded Class V (excellent wheat land); nearly one-tenth (9.7 per cent) were located on Land Class I (submarginal for wheat production); and 25.7, 22.6 and 7.7 per cent on Land Classes II, III and IV, respectively.

Size.—Farms averaged 637 acres of which 499 were improved. Table 3 provides a classification of farms according to size and land classes. This classification does not indicate a very pronounced difference in averages, assessed on the basis of total acres, for the different grades of land but they demonstrate that the higher grades of land were associated with a marked increase in the average acreage of improved land. In terms of total farm area, quarter-section farms were most common in Land Class I and farms of two sections or more were most common in Land Classes I and V. However, farms in Land Class V had, on the average, more than double the amount of land under cultivation than those in Land Class I.

The proportion of farms in Land Class V increased gradually with the increase in size of farm; the proportion in the other land classes, arranged according to total size of farm, tended to decrease (Figure 1).

The remainder of the average farm unit is, of course, made up of unimproved land which is generally used for grazing and averaged 436, 195, 139, 73 and 25 acres for Land Classes I to V, respectively. On the average, therefore, farms in Land Class I had nearly three quarter-sections of grazing land and those in Land Classes II and III about one-quarter section; it was possible for these farms to include a moderate number of livestock in the farm business.



Figure 4—Percentage distribution of farms according to size and tenure.

Although the average farm was about one section in size the most common size was the half-section farm. Half-section farms made up 25.5 per cent; section farms, 21.7 per cent; and three-quarter-section farms, 18.8 per cent of all farms. These three size groups accounted for two-thirds of all farms. At the extremes, there were 247 or 4.7 per cent one-quarter-section farms and 433 or 8.2 per cent of two-section or larger farms.

Arranged according to land class, the most common sizes of farm were the three-quarter-section farms in Land Class I; the half-section farms in Land Classes II, III and IV; and the section and half-section farms in Land Class V.

In terms of improved acreage per farm, the farms with 300-399 acres were the most common and then those having from 200-299 and from 400-499 improved acres. Farms in these three size groups made up almost half of all the farms. Of the 177

farms with less than 100 improved acres, 108 belonged to Land Class I. On the other hand, 251 of the 374 farms with 1,000 or more acres were in Land Class V.

In Land Class I, farms with 1-99, 100-199 and 200-299 acres were the most common and about equally divided; in Land Classes II and III, farms with 200-299 improved acres were the most common; in Land Class IV, farms with 300-399 and 400-499 acres were the most common and about equally distributed; and in Land Class V, the most common size was 600-699 acres.

Land Tenure.—The tenure status of farm operators is assumed to have a significant influence on the use of land. In the study area, as in others, there is a considerable difference in size of farms among the different tenure groups¹; owners had an average of 540 assessed acres compared with 610 assessed acres for tenants and 912 assessed acres for part-owners and part-tenants. Owners made up 61 per



Figure 5—Farm size: percentage distribution according to tenure.

cent of all farm operators, tenants 16 per cent, and part owners 23 per cent. Owners were most common on farms in Land Classes II and III; tenants on farms in Land Classes IV and V and part-owners on those in Land Classes I and V.

The practice of increasing the size of the farm unit by renting additional land is well illustrated in Figure 4. This figure also indicates that ownership is the most common type of tenure for farms ranging up to six quarter-sections. On the basis of improved acreage the same situation holds true for farms up to five quarter-sections.

The proportion of farmers classed as owners was 90 per cent for all quarter-section farms. The proportion of owners decreased sharply with the increase in farm size until the eight- and nine-quarter-section farms were reached, whereas part-owners were at a maximum in the largest-size group. The proportion of tenant-operated

¹ See "Size and Tenure of Farms in Three Prairie Areas of Saskatchewan," in *The Economic Annalist*, Vol. XXI, No. 6. December 1951. p. 139.

farms was nearly the same for all sizes of farms up to eight-quarter-section farms (1,280 assessed acres). Over that size, farms were generally operated either by owners or part-owners. This pattern was similar for all grades of land.

For the "owner" group the most common size of farm was the half-section farm; for the "tenant" group it was either the half-section or the one-section farm and for the part-owner group the section farm was the most common. Nearly three-quarters of the owner-operated and tenant-operated farms were two-, three- or four-quarter-section farms whereas three-quarters of the part-owner-part-tenant operated farms were three to seven quarter sections in size. The frequency distribution of farms according to tenure is indicated in Figure 5.

Mechanization and technological developments have resulted in marked increases in the size of farms in this area but, in general, these increases have continued to be geared to the labour resources of the farm family. The main farm problems arising out of changes in scale relate to the adjustments that must be made rather than in an attempt to forestall an increase in the size of the farms. Changes in farm size have been centered around the labour force supplied by the farm family and a substitution of capital for hired labour. This has increased the command of family labour over the other resources. The smaller farms have not been able to make satisfactory adjustments and thus display some inefficiency in the use of farm resources. Adequate farm scale and satisfactory tenure relationships go hand in hand in achieving a desirable degree of permanence and stability of agricultural production.

SOME ASPECTS OF FARM ORGANIZATION, FARM PRACTICES, AND PROSPECTS FOR FORAGE PRODUCTION IN WEST CENTRAL MANITOBA

R. C. NICHOLSON

The acreage in forage crops in Manitoba has not been large compared with that in grain crops. However, between 1910 and 1945 the land used for forage crop production increased gradually from 139,000 to 704,000 acres.¹ This upward trend was sharply reversed in 1946 when the acreage dropped to 306,000. The reduction took place in all parts of the Province. From 1946 to 1951 the acreage reached 399,000, the increase occurring mainly in areas where a livestock-grain combination of farm organization predominated.

An insight into the farm organization and practices necessary for successful forage production was obtained from a survey of 100 farms made by the Economics Division in 1952. These farms were in Census Divisions 10 and 11 between the towns of Neepawa and Birtle and were selected on the basis of acreage and years in forage crop production.

Organization and Management.—In the survey area alternative types of farm organization were possible because the majority of farms had fertile soils, a good water supply and a considerable area in native pasture. Therefore, the farm organization adopted depended primarily on the preference and ability of the farm operator. The survey farms carried on a more diversified type of farming than the average for the area. The importance of the livestock enterprise on these farms is indicated by the investment in livestock (Table 1). Receipts from the sale of livestock and products were about two-thirds as large as those from grain sales. On the survey farms, 16.1 per cent of the improved land was in forage compared with 4.6 per cent² for the whole area. Another special characteristic of the survey farms was their stable labour supply—mainly the operator and his son(s).

In their production preference, 45 farmers considered grain and livestock of equal importance, 43 preferred livestock and 12 preferred grain. The latter two groups diversified their production because of the risks involved in specialization. The operators felt that livestock was the best insurance that a grain farmer could acquire and that tame hay and pasture crops were essential to a successful livestock program.

¹ 1951 *Census of Canada*. During the same period, the area sown to wheat, oats and barley increased from 4,384,000 to 5,968,000 acres.

² 1951 *Census of Canada*.

The two main reasons for the introduction of forage on these farms were the desire for higher quality and the need for a larger quantity of feed. Soil fertility maintenance and soil conservation measures were of secondary importance. Other factors of much less significance were: the production of forage seed, a reduction in summerfallow acreage, a better seasonal distribution of labour requirements and the control of wild oats.

Farmers who had considerable experience with forage production indicated that they observed an increase in the yields of grain and a reduction of wild oats infestation on fields which had been rotated with hay and pasture crops as compared to fields that had been used only for grain production. All the farmers stated that wild oats created the most serious weed problem on their farms. They also said that in the survey area grain crop yields were being maintained mainly through changes in tillage practices, increased summerfallow acreage, and the application of commercial fertilizer, all of which increased costs.

Ninety-five of the farmers used a flexible rotation on forage and cereal crop lands. The most common system consisted of a three-year rotation (grain, grain, fallow) with the fields in forage left down until it was absolutely necessary for a new field to be seeded. Only two farmers were actually following an eight-year rotation and three were in the process of establishing one. Eighty-three of the farmers planned to rotate the forage crops over their entire farm, taking from

Table 1.—Average Capital Investment per Farm, according to Size of Farm, 100 Farms West Central Manitoba, 1952*

	Number of Quarter-Sections			All Farms
	Two	Three	Four or More	
Number of farms.....	32	32	36	100
	—dollars—			
Real estate.....	13,529	16,196	24,014	17,977
Machinery and equipment.....	6,779	10,948	12,553	10,192
Livestock.....	4,684	6,331	7,886	6,364
Feed and supplies.....	987	1,200	2,206	1,494
Total.....	25,979	34,675	46,659	36,027

* These data can be compared with information available for the western part of the survey area, in two reports by T. O. Riecken, *A Farm Business Study in the Hamiota Area of Manitoba, 1948* and *A Farm Business Study in the Birle-Shoal Lake Area of Manitoba*, published by the Economics Div., Canada Dept. of Agriculture, Ottawa, in September 1952 and November 1953, respectively.

eight to thirty or more years to do so. Seventeen planned to confine forage crops to a particular area of their farm because of the remote or otherwise unique location of some fields, the terms of rental agreement on part of the farm, or the necessity of forage production on fields where continuous grain growing resulted in excessive erosion or other similar problems. Twenty-seven farmers reported that all or part of their forage was produced on improved land that was unsuitable for grain production.

There were improved pastures on 57 farms; 39 of these pastures were used to full capacity, 11 were over-grazed and seven under-grazed. Twenty-three farmers used a grazing rotation to increase the capacity of these pastures, 20 used barnyard manure and two used commercial fertilizer. In addition to the improved pastures, there were 86 farms with native pastures; 58 of these were grazed to full capacity, 12 were over-grazed and 16 under-grazed. Forty farmers had attempted to increase the grazing capacity of their native pastures. The main methods used were: clearing brush, spraying with 2-4-D, reseeding over-grazed areas and following a grazing rotation. In each case, the area affected was limited. As a supplement to the regular pasture, about one-half of the farmers used their hay meadows after putting up the hay and approximately three-quarters used stubble and summerfallow lands.

One-half of the farmers had immediate plans to change their forage program: 19 indicated that they were going to increase the acreage, 14 planned to re-organize their farms and set up a more definite grain-forage rotation, five planned to reduce the number of years that their hay and pasture fields were left down, five expected to purchase silage-making equipment, and the remainder planned to use green manure crops, set up a pasture rotation, or grass down fields that showed signs of depletion.

Seeding Practices.—Ninety-nine farmers seeded the forage in the spring of the year and one seeded in early summer. Fall seeding was considered impractical as weather conditions were seldom favourable. The forage was seeded with a companion crop, except in some locations such as along gullies or other badly eroded areas.

Sixty-six farmers seeded the companion and forage crops in the same operation: 56 of these mixed the companion crop and forage seed in the drill box, six used a grass seeder attachment and four used a fertilizer attachment. Twenty-nine farmers used a seed drill in a separate operation to sow their forage: 21 of these drilled the seed into the ground and eight broadcasted the seed by dangling the seed ribbons. Broadcasting with a hand-operated machine was the main method used by the other five farmers.

Of the 29 farmers that used the grain drill in a separate seeding operation, 14 cross-seeded and seven seeded in the same direction as the companion crop: the eight who broadcasted by dangling the seed ribbons had no preference regarding the direction of seeding. The separate seeding operation was used mainly to control the depth and rate of seeding. Cross-seeding and broadcasting were used to improve the competitive location of the forage seedlings.

All the farmers drag-harrowed after seeding and a few used the packer. Both operations were considered important, especially following shallow seeding and broadcasting, to insure better seed coverage and higher germination. Care in the preparation of the seed-bed and in the seeding operation were important factors contributing to a good catch.

Based on their experience with forage production, the farmers reported that they could expect an excellent stand ten per cent of the time, a good stand 80 per cent, a poor stand nine per cent, and a complete failure one per cent of the time. These farmers were above average in their ability to handle forage and, therefore, similar results would not be expected from a study of all farms in the area.

Forage Species Used and Rates of Seeding.—Alfalfa, brome grass and sweet clover were the main species grown in pure stands. These species and meadow fescue, crested wheat grass and timothy were used in the various mixtures, which were favoured for both hay and pasture production.

There was a fairly wide range in the rate of seeding each species and mixture, but as a definite tendency was evident, the average may be considered representative. The main factors which influenced the rate of seeding were the condition of the soil and whether forage was to be grown for hay, seed, or erosion control.

Alfalfa was seeded at an average rate of 9.5 pounds per acre by 22 farmers, brome grass at 10.4 pounds per acre by 22 farmers, and sweet clover at 11 pounds per acre by 39 farmers. The brome alfalfa mixture was seeded by 60 farmers at an average rate of 8.9 pounds of brome grass with 4.2 pounds of alfalfa. Seventeen farmers seeded other mixtures and in all but a few cases either alfalfa, brome grass or both were included.

Forage Harvesting Machinery and Methods.—As a general rule the farmers had a limited number of forage harvesting machines and relied on rented or borrowed equipment during years of heavy crops. Table 2 shows the actual number of machines on the farms. Although tractors, wagons, hay racks, etc., are essential for forage harvesting operations they were not included in the table because they would be present on the farm whether forage was produced or not.

The methods used to harvest forage are illustrated in Table 3. By observing the number of farmers using each method, it will be realized that a large percentage still used methods that rely heavily on a long day and a strong back. At the same time, the use of special machines as a partial substitute for labour in forage harvesting operations is indicated by the fact that 27 farmers used a farm hand, 17 used a baler,

Table 2.—Number of Forage Harvesting Machines according to Size of Farm and the Average Value of Each Machine, 100 Farms, West Central Manitoba, 1952

	Number of Quarter-Sections			All Farms	Average Value of Each Machine
	Two	Three	Four or More		
Number of farms.....	32	32	36	100	—
	—number of machines—				dollars
Farm hand.....	4	7	9	20	520
Baler.....	2	2	1	5	1,506
Field cutter or harvester.....	—	2	—	2	950
Stationary cutter or chopper.....	8	8	4	20	268
Hay loader.....	2	1	1	4	190
Hay sweep.....	4	4	5	13	69
Overshot stacker.....	2	3	1	6	84
Horse mower.....	25	23	24	72	59
Power mower.....	9	8	16	33	217
Dump rake.....	30	25	26	81	37
Side-delivery rake.....	4	6	11	23	178

ten an overshot stacker, five a hayloader and four used either a forage harvester or a field chopper. The difference in numbers of machines used over those present on the farms (Table 2) represents the number borrowed or rented.

Although the amount of forage harvesting equipment on the farms was closely related to the tonnage of forage to be handled, it was more closely associated with the financial resources of the farmer. Farmers with sufficient financial resources have a greater tendency to use high-cost, labour-saving machinery and methods than those with limited resources.

Investment in Forage Harvesting Machinery.—As indicated in Table 4 the average investment was \$436 per farm. The difference of about \$100 between the smallest and the two largest farm size-groups can be attributed to a greater tendency on the part of the operators of the smallest farms to use borrowed, rented or less costly machines. In spite of this difference, the investment per acre, and as a per cent of the total investment in farm machinery, was more important on the smallest farms.

Table 3.—Methods of Handling Forage on 100 Farms, West Central Manitoba, 1952

Description of Method ^a	Number of Farmers Using Each Method ^b
Mow, rake, stack with farmhand, haul in winter.....	27
Mow, rake, bale, haul to farm.....	6
Mow, rake, bale, stack in field, haul in winter.....	8
Swath, bale, haul to yard and stack.....	3
Mow, rake, sweep and stack with overshot stacker, haul in winter.....	10
Mow, rake, pick up with hayloader, haul to loft or yard.....	5
Mow, rake, stack with hay boat, haul in winter.....	4
Mow, rake, sweep, stack, haul in winter.....	3
Mow, rake, stack in field with rack and team, haul in winter.....	19
Mow, rake, haul to yard or loft by rack and team.....	14
Binder, stook, stack in field, haul in fall and cut.....	6
Binder, stook, haul to yard or barn.....	11
Field-chopper, haul to pit silo.....	1
Forage harvester, haul to yard, blow into upright silo.....	3

^a Closely related methods have been combined. Methods employed to handle only a small portion of the farmer's forage were not included.

^b Double counting occurs where some farmers reported the use of more than one method, especially where corn and clover were produced as a major part of the forage crop, as these crops were handled in the sheaf or as silage.

Table 4.—Average Acreage in Improved Land and in Forage Crops, and Investment in Forage Harvesting Machinery According to Size of Farm, 100 Farms, West Central Manitoba, 1952

	Unit	Number of Quarter Sections			All Farms
		Two	Three	Four and more	
Number of farms.....		32	32	36	100
Land Use—					
Amount improved.....	acre	226.4	300.7	449.3	330.4
Amount in forage.....	acre	39.0	54.0	64.7	55.1
Investment in forage harvesting machinery—					
Total.....	dollars	366.00	461.00	476.00	436.00
Per improved acre.....	dollars	1.61	1.53	1.05	1.81
Per forage acre.....	dollars	8.96	8.53	7.36	8.12
As a percentage of the total investment in farm machinery.....	per cent	5.4	4.2	3.8	4.3

The investment ranged from zero, for the farmer who borrowed and rented all his forage harvesting machinery, to \$2,400 for the farmer who owned a full line of specialized machinery. There were 50 farmers with an average investment in forage harvesting machinery of \$127; 24 with \$416; 19 with \$765; and seven with \$1,816. The machines usually owned by the farmers in the first group were a mower and rake whereas those in the latter group owned a baler, a forage harvester or a field chopper. The wide range in the investment in forage harvesting machinery resulted mainly from the difference in the average value of the machines (Table 2).

Forage Production Prospects.—The majority of the farmers were satisfied with forage production on their farms but they did not expect a significant increase in acreage in west central Manitoba. Observations made in the field and from the record data indicate that there were several factors which supported the farmers' predictions. Farmers associate forage production with a fixed rotation and they tend to favour a more flexible type of organization. Crop production plans are normally made on a yearly basis and this makes it difficult to provide a place for forage in the production program. A large number of farmers were not interested or engaged in livestock production and would thus have been unable to use forage crops on their own farms. The landlords seldom favoured forage production because their incomes were derived from grain crop sales. It was also evident that forage production required special management practices which were unnecessary for grain production. Forage crops were grown on lands that normally produced cereal crops and, therefore, in the initial years at least, a lower gross income was anticipated. Some farmers were unable to accept this reduction in income. Normally, it was the younger farmer who lacked financial resources and although he visualized long-run benefits from forage production, his most pressing obligations had to be retired in the near future. The farmer was more concerned with making a living for his family and paying off the farm debts than he was with conserving land for posterity. Only farmers who had attained a desired level-of-living felt free to devote some of their income to longer term projects. Unfortunately for forage production, it was usually the older farmers who had acquired the necessary financial resources and they tended to be uninterested in forage production because they were unable to look after livestock or did not plan to farm long enough to realize long-run benefits. The majority of the survey farms were father-and-son operated or had been inherited or purchased by the son, a condition which facilitates the introduction of forage crops in a production program.

The future of forage production will be closely associated with improvements in labour-saving machines and production methods used in forage and livestock enterprises relative to similar improvements used in the cereal crop enterprise. Inter-related with this will be the influence of the comparative returns from livestock and cereal crops. Also, it is very likely that forage production will increase when farmers generally realize the need to follow methods and practices that will lessen the rate of soil depletion.

PUBLICATIONS OF THE ECONOMICS DIVISION

Farm Organization, Income and Debt Paying Capacity in West Central Alberta, Spence, C. C., Ottawa. January 1954. pp. ii + 21.

A study which supplies a general appraisal of the farms in the Red Deer-Wetaskiwin area of Alberta and information on their organization and operation, their expected net revenues, the prices paid for land and the terms of purchase, and the opportunities for purchasers of farms to meet their commitments.

The three main parts of the report deal with: *Farm Organization, Farm Operation, and Financing the Farm Business.*

UNITED NATIONS PUBLICATIONS

Progress in Land Reform.—Dept. of Economic Affairs. New York. (In Canada: The Ryerson Press, Toronto, and Periodica Inc., Montreal). 1954. pp. xiii and 322.

An "Analysis of replies by governments to a United Nations questionnaire" prepared in co-operation with the Food and Agriculture Organization and the International Labour Organization, and circulated in November 1952 by the Secretary-General.

Part I describes and analyzes *General Reform Policies and Agrarian Structure* in various countries. Part II discusses *Measures of Reform* under the following headings: *Measures to Provide Opportunity of Ownership; Land Settlement and Secure Tenure; Conditions of Tenancy; Hired Workers and Rural Employment; Protection of Cultivators under Tribal, Communal and Other Traditional Forms of Tenure; Economic Holdings; Land Registration; Agricultural Credit and Reduction of Indebtedness; Promotion of Co-operative Organizations; Organizations to Provide Machine Service; Fiscal Policy in Relation to Land Reform; and Other Measures.* Part III includes a *Summary and Recommendations*, which provide a concise review of *The Extent of Progress Achieved; The Need for Further Progress; and Obstacles to Further Progress and Recommendations for International Action.*

European Agriculture, A Statement of Problems. Prepared jointly by the Secretariats of the Economic Commission for Europe and the F.A.O. Geneva. February 1954. pp. vi + 83.

A study of problems relating to agricultural production and trade policies in European countries. The report includes chapters on: *Main Factors Influencing the Productivity of European Agriculture; Food Consumption; Agricultural Policy in Western Europe; Agricultural Policy in Eastern Europe and the Soviet Union; and The Trade of European Countries in Agricultural Products.*

OTHER PUBLICATIONS

Methods of Agricultural Extension. Wageningen, The Netherlands, Agricultural University of Wageningen. 1953. pp. 438.

A report, including lectures given between July 13 and August 8, 1953, at a Training Centre organized by the International Agricultural Study Centre and the Agricultural University of Wageningen in collaboration with the United Nations Food and Agriculture Organization and the Mutual Security Agency.

This comprehensive report is divided into four main parts and includes four *Introductory Lectures on Agricultural Extension*; eleven lectures on *Special Aspects Affecting Extension Methods*; ten on *Methods of Agricultural Extension*; and thirteen on the *Application of Extension Methods in Practice.* These lectures were given by experts from several countries. They stress the need for the development and improvement of extension methods that will help bridge the gap between research findings and methods and practices followed in agriculture.

Milk Distribution and Pricing in Great Britain. Spencer, Leland and Stewart Johnson. Ithaca, N.Y. Cornell University Agr. Exp. Sta. bul. 902. August 1953. pp. 147.

The authors study the problems of milk distribution and pricing in Great Britain "with special attention to the British Experience with Rationalization Plans". Their study is descriptive and analytical in character and contains many practical suggestions for improvement of existing conditions. The detailed analysis is encompassed within chapters on: *Production and Utilization of Milk; Distribution Methods and Agencies; Consumption of and Demand for Milk; Pricing of Milk—to Producers, Dealers, and Consumers; Unified System of Collecting Milk from Farms; Zoning of Milk Distribution in Cities; and Summary and Conclusions*. The bulletin ends with a long bibliography which should prove very useful to all those concerned with milk distribution and pricing problems.

Farm Labour in Ontario. Lane, S. H. and D. R. Campbell. Dept. of Agricultural Economics, Ontario Agricultural College and Ontario Dept. of Agriculture. Guelph, Ontario Agricultural College. 1954. pp. 91.

A detailed analysis of findings made after a study of the farm labour problem in Ontario. The authors have divided their report into five sections: *The Farm Labour Problem; Description of Farms; Description of the Farmers, their Families, and their Working Conditions; Description of the Labourers; Factors Affecting the Labour Problem; Farmer-Labourer Relationships; Summary; and, Conclusions and Recommendations*.

Disponibilités, Mode de Vente et Lieux d'Écoulement des Produits Agricoles, 1950-51-52. Région du Saguenay, No. 11. Québec, Division des Marchés et des Enquêtes du Service de l'Économie Rurale, Ministère de l'Agriculture de la Province de Québec. 1954. pp. II and 167.

The second in a series of eleven statistical reports on the marketing of agricultural products, to be prepared by the Quebec Department of Agriculture. The present report deals with region No. 11, the Saguenay region, including the counties of Charlevoix, Chicoutimi, Lac-St-Jean-Est, Lac-St-Jean-Ouest and Saguenay.

Canadian Journal of Agricultural Economics. 1953 Proceedings Number. Vol. II, No. 1, Fall 1953. Saskatoon, Sask., University of Saskatchewan. 1954. pp. 94.

In this proceedings number The Canadian Agricultural Economics Society publishes the ten papers presented at its annual meeting in 1953, as well as the discussions of these papers and the minutes of the twenty-third annual meeting.

Papers on *Trends in Farm Labour* dealt with *Farm Labour in Ontario* and *The Economy of Labour on Western Canada Farms*; the series on *Problems in Farm Credit* included papers on *Capital Formation in Agriculture*, *Financing Beginning Farmers*, *The Provision of Working Capital for Agriculture in Saskatchewan*, and *The Provision and Maintenance of Farm Mortgage Credit*; the series on *Developments in the Marketing of Farm Products* comprised papers on *Current and Prospective Transportation Developments Affecting Agriculture*, *Current Practices in the Marketing of Commercial Potatoes in Alberta* and *Some Suggestions for Future Agricultural Marketing Research*, *The Development and Operation of the Bradford Marsh Fresh-Vegetable Growers' Marketing Scheme*, and *Methods of Determining the Consumption of Foods*.

The Use of Aircraft in Agriculture in the U.S.A. Published by the Organization for European Economic Co-operation; 2, rue André-Pascal, Paris 16. 1953. pp. 108.

One of a series of studies sponsored by the Food and Agriculture Committee of the O.E.E.C. The present report "is designed to foster the development of agricultural aviation in Western European countries . . . by drawing upon the extensive experience gained in the United States . . .".

The report is divided into two Parts. Part I has the following chapters: *Introductory; Development of agricultural aviation in the United States; and Future of agricultural aviation in Europe and recommendations*. Part II includes: *Uses of aircraft in agriculture; Research and extension work on agricultural aviation; Economic aspects of using aircraft in agriculture; Operational costs; Field Operations; and Equipment*. There are detailed Annexes on: *Economic data; Operational Data; Technical requirements of fixed-wing aircraft for agricultural use; and Technical description of application equipment*.

THE ECONOMIC ANNALIST

A BIMONTHLY REVIEW OF AGRICULTURAL BUSINESS

G. P. BOUCHER, Editor

OCTOBER 1954

Vol. XXIV, No. 5

CONTENTS

	Page
The Economic Situation.....	99
Recent Trends in the Production and Distribution of Canadian Apples.....D. W. Ware	101
Land Utilization and Rate of Land Improvement on Lands in the Saskatchewan River Delta.J. P. Hudson	104
Marketing Practices of Cattle Ranchers in Southwestern Saskatchewan.....S. R. Burkell	108
Consumers' Opinions of Side Bacon.....Charlotte I. Johnston	112
Land Use in the Peace River Area of British Columbia.....R. H. Campbell	115
Publications of the Economics Division.....	118
United Nations Publications.....	119

MARKETING SERVICE, ECONOMICS DIVISION

J. F. BOOTH, Chief

Published by Authority of the Right Honourable James G. Gardiner
Minister of Agriculture

ANNUAL AND MONTHLY INDEX NUMBERS
WHOLESALE PRICES, FARM PRICES AND LIVING COST INDEXES

Year	Wholesale Prices 1935-1939=100				Farm Prices of Agricultural Products 1935-39 = 100 (e)	Commodities and Services used by Farmers 1935-39=100		Cost of Living 1935-39 = 100		Consumer Price Index (1949 = 100) (j)
	(a) General Wholesale Index	(b) Farm Products	(c) Field Products	(d) Animal Products		(f) Equipment and Materials	(g) Eleven Factor Index	(h) Farm Living Costs	(i) Urban Living Costs	
1913.....	83.4					85.4		80.1	79.1	49.2
1914.....	85.4					90.2	85.3	82.3	79.7	49.6
1915.....	91.8					96.9	91.6	86.5	80.7	50.3
1916.....	109.8					101.7	100.5	93.7	87.0	54.2
1917.....	148.9					140.7	140.5	111.5	102.4	63.7
1918.....	166.0					164.1	160.2	131.1	115.6	72.0
1919.....	174.7					169.1	167.9	143.0	126.5	78.8
1920.....	203.2					190.1	186.5	171.3	145.4	90.5
1921.....	143.4					147.4	152.5	139.9	129.9	80.9
1922.....	126.8					124.6	134.1	127.9	120.4	74.9
1923.....	127.7					118.3	130.6	128.3	120.7	75.2
1924.....	129.5					122.3	131.9	125.5	118.8	74.0
1925.....	133.8					123.2	131.8	123.9	119.8	74.6
1926.....	130.3	144.4	158.5	130.2		119.9	130.6	121.1	121.8	75.9
1927.....	127.3	138.6	149.4	127.8		119.9	131.2	119.8	119.9	74.6
1928.....	125.6	136.3	134.3	138.2		118.3	129.3	118.5	120.5	75.0
1929.....	124.6	140.8	137.2	144.4		117.6	127.9	117.3	121.7	75.8
1930.....	112.9	119.5	105.8	133.3		105.6	117.0	113.7	120.8	75.3
1931.....	94.0	78.9	65.0	92.7		92.2	100.9	103.9	109.1	67.9
1932.....	86.9	65.5	60.4	70.5		89.3	93.3	97.8	99.0	61.7
1933.....	87.4	69.3	69.3	69.2		88.8	89.8	95.8	94.4	58.8
1934.....	93.4	83.5	80.5	86.5		96.8	95.5	97.9	95.6	59.6
1935.....	94.4	89.2	84.4	94.1	88.0	95.6	95.4	97.9	96.2	59.9
1936.....	96.7	97.9	102.2	93.7	96.9	98.7	98.1	98.3	98.1	61.1
1937.....	107.8	117.4	128.9	106.0	119.7	108.4	105.3	102.9	101.2	63.0
1938.....	102.0	102.9	100.9	104.8	105.0	101.2	101.7	101.9	102.2	63.7
1939.....	99.2	92.6	83.7	101.5	91.8	95.7	99.3	99.5	101.5	63.2
1940.....	108.0	96.1	85.4	106.7	96.8	101.8	106.8	108.5	105.6	65.7
1941.....	116.4	106.6	88.9	124.4	110.2	107.8	116.1	114.1	111.7	69.6
1942.....	123.0	127.1	109.7	144.6	133.1	119.2	131.6	119.0	117.0	72.9
1943.....	127.9	145.4	129.0	161.8	157.8	122.4	143.4	121.7	118.4	74.2
1944.....	130.6	155.3	144.5	166.1	172.4	126.0	148.0	122.8	118.9	74.6
1945.....	132.1	166.4	162.5	170.2	185.7	125.9	152.1	123.2	119.5	75.0
1946.....	138.9	179.5	177.9	181.2	204.1	128.0	157.0	127.1	123.6	77.5
1947.....	163.3	192.2	184.1	200.2	215.8	139.5	170.4	138.3	135.5	84.8
1948.....	193.4	232.1	200.6	263.7	255.8	173.1	197.4	162.8	155.0	97.0
1949.....	198.3	228.7	191.9	265.4	255.4	180.3	204.1	173.2	160.8	100.0
1950.....	211.2	236.7	191.9	281.4	260.8	189.9	210.4	177.6	166.5	102.9
1951.....	240.2	268.6	200.4	336.9	296.8	206.0	230.0	198.6	184.5	113.7
1952.....	226.0	249.0	220.5	277.5	274.4	215.8	243.1	210.0	187.5	116.5
1953.....	220.7	219.5	175.1	263.8	247.4	207.4	239.8	203.6	.....	115.5
1953 Oct.....	220.4	208.5	151.7	265.3	235.9	.....	.....	.....	.....	116.7
1953 Nov.....	218.7	204.9	151.7	258.0	229.2	.....	.....	.....	.....	116.2
1953 Dec.....	219.0	206.8	151.9	261.6	229.7	.....	.....	.....	.....	115.8
1954 Jan.....	219.8	209.4	152.5	266.3	233.2	204.0	231.1	204.8	.....	115.7
1954 Feb.....	219.0	208.8	152.9	264.7	234.0	.....	.....	.....	.....	115.7
1954 Mar.....	218.6	206.7	151.3	262.0	233.0	.....	.....	.....	.....	115.5
1954 Apr.....	217.9	205.5	150.6	260.4	231.3	204.1	238.0	204.2	.....	115.6
1954 May.....	218.2	209.6	151.2	268.0	233.3	.....	.....	.....	.....	115.5
1954 June.....	217.8	209.6	151.9	267.3	234.9	.....	.....	.....	.....	116.1
1954 July.....	217.4	214.4	166.6	262.1	234.5	.....	.....	.....	.....	116.2
1954 August.....	215.8	207.9	167.6	248.2	.....	.....	.....	.....	.....	117.0

(a) Canada. Dominion Bureau of Statistics, Labour and Prices Division. *Prices and Price Indexes*. (Mimeo.) Ottawa, Monthly.

(b) Ibid. (a). Wholesale prices of products of Canadian farms.

(c) Ibid. (a). Wholesale prices of grains, hay, tobacco and potatoes.

(d) Ibid. (a). Wholesale prices of animals and animal products.

(e) Canada. Dominion Bureau of Statistics, Agriculture Division. *Index Numbers of Farm Prices of Agricultural Products*. (Mimeo.) Ottawa, Monthly.

(f) Canada. Dominion Bureau of Statistics, Labour and Prices Division. *Price Index Numbers of Commodities and Services Used by Farmers*. (Mimeo.) Ottawa, Jan., Apr. and Aug. Includes prices of commodities in 8 groups including farm implements, building materials, gasoline, oil and grease, feed, fertilizer, binder twine, seed and hardware.

(g) Ibid. (f). Includes the 8 commodities indicated above plus tax rates, interest rates and farm wage rates.

(h) *Price Index Numbers of Commodities and Services used by Farmers*. Includes food, clothing, fuel, household equipment, health, maintenance and miscellaneous.

(i) *Prices and Price Indexes*. Includes food, rent, fuel and lighting, clothing, home furnishings and services, miscellaneous and retail prices of commodities.

(j) Canada. Dominion Bureau of Statistics, Labour and Prices Division. *Price Movements*. (Mimeo.) Ottawa, Monthly.

THE ECONOMIC SITUATION

Gross National Product.—In the second quarter of 1954 Canada's gross national product remained steady at a seasonally adjusted annual rate of \$23.9 billion. The level of aggregate output was thus unchanged from the first quarter of 1954 but almost two per cent below the annual average of \$24.3 billion for the second quarter of 1953. This decline reflects a much lower crop production value, estimated to be \$400 million below that of a year ago.

Population.—Canada's population increased by 201,000 during the first six months of 1954, exceeding by 29,000 the increase in the corresponding period of 1953. The estimated population was 15,035,000 at the start of 1954 and 15,236,000 at July 1, compared with 14,649,000 and 14,821,000 at the corresponding dates in 1953.

The gain for the year ended July 1 was 415,000 compared with 354,000 for the 12 months ending July 1, 1953. During the first six months of 1953 population increased at an annual rate of 2.7 per cent compared with 2.3 per cent during the first half of 1953.

Domestic Exports.—A sharp reduction in shipments of farm products, mainly wheat, other grains and wheat flour, accounted for most of the 17.4 per cent decline in the value of Canada's domestic exports in July, compared with a year earlier, and also for an 8.8 per cent decline in the cumulative value for the first seven months of the year, from the corresponding period of 1953. A little less than a third of the seven-month decline in value was due to lower prices and over two thirds to a reduced volume of exports.

Domestic exports in July 1954 were valued at \$323.9 million, or \$69.2 million lower than in July last year. The total for the first seven months of the year was \$2,168 million, or \$218.4 million less than the \$2,387 million for the first seven months of 1953.

Wheat shipments dropped from \$71.3 million in July 1953 to \$32.8 million in July this year, and other grains from \$23.6 million to \$10.5 million; shipments of wheat flour declined from \$10.4 million to \$7.6 million. The decreases in the volume of these three commodities represented nearly 80 per cent of the July drop in domestic exports. For the January-July period, exports of wheat were down \$143.5 million to \$199.3 mil-

lion, other grains \$33.1 million to \$66.4 million and wheat flour \$7.6 million to \$55.1 million, representing over 80 per cent of the cumulative decline in exports.

Domestic exports to the United States in July declined 8.6 per cent—about half the rate of decrease for exports to "all countries"—from \$208.8 million in July 1953 to \$190.8 million in July this year. The total for the first seven months of the year declined 6.8 per cent from \$1,397 million to \$1,311 million—much less than the decline in shipments to all other countries.

Shipments to the United Kingdom dropped from \$80.9 million in July 1953 to \$55.2 million in July this year and from \$395.1 million in the January-July period of 1953 to \$343.5 million in the corresponding period this year. Exports to all other Commonwealth countries declined from \$22.8 million in July 1953 to \$17.3 million in July 1954, and from \$140.5 million in January-July 1953 to \$110.2 million in the January-July period of this year.

Reversing the trends of earlier months, shipments to Latin-America increased from \$16.1 million in July 1953 to \$18.0 million in July this year, but the cumulative total for the first seven months of the year was still below the total for the corresponding period of 1953, the figures for the two periods being \$115.7 million and \$112.4 million respectively. Total exports to European countries continued to decline; from \$48.0 million in July 1953 they dropped to \$26.7 million in July this year, and from \$222.8 million in the January-July period of 1953 they dropped to \$171.8 million in the corresponding period of 1954.

Prices.—The consumer price index advanced from 116.2 to 117.0 between July 2 and August 2. This advance was almost entirely attributable to a rise in the food index from 112.1 to 114.4. Beef, lamb, eggs, citrus fruit, tea and most canned goods were higher and potatoes registered an increase of 13.8 cents per ten pounds. Other fresh vegetables and pork were lower. These price changes were mainly seasonal in character and were combined with normal seasonal shifts in consumption.

The shelter index rose from 126.6 to 127.0 and reflected advances in rents and residential building costs. The clothing and household operation indexes remained

unchanged at 109.6 and 117.2 respectively. The index for "other commodities and services" rose from 117.6 to 117.7; higher rates were reported for hospital services in several cities and for newspapers in Ottawa. Gasoline prices were lower in 21 cities, located mostly in Eastern Canada.

A decline in livestock prices outweighed increases in the prices of dairy products, potatoes, poultry and eggs and caused a slight reduction in the index of farm prices of agricultural products from 234.9 in June to 234.5 in July.

Farm Income.—Canadian farmers (Newfoundland excluded) received an estimated \$1,094 million from the sale of farm products and from participation payments for the 1953 wheat crop in the first six months of 1954. This amount is 7.5 per cent lower than the \$1,183 million collected in the first half of 1953 and about 12 per cent lower than the all-time January-June peak of \$1,242 million in 1951. About \$72.6 million of the total decline of \$88.7 million, compared with the first six months of 1953, occurred in the second quarter of 1954.

Substantial cuts in cash income from wheat, barley, barley participation payments, rye, corn and potatoes contributed to the reduction in farm cash income. Wheat accounted for more of the decline than any other single commodity; much smaller marketings and lower prices reduced total receipts from \$242.9 million in the first six months of 1953 to \$132.7 million in the corresponding period of 1954, a reduction of 45 per cent. On the other hand, income from the sale of livestock and livestock products increased. Larger marketings for all livestock more than offset lower prices for all classes except hogs and increased the total returns by 16 per cent, from \$317.4 million to \$368.5 million. Income from cattle and calves rose about seven per cent to \$185.8 million and income from hogs about 27 per cent to \$180.5 million. Lower egg prices were more than offset by higher marketings;

total cash income from sales rose from \$60.3 million to \$62.3 million. Farm income from dairy products increased from \$196.5 million to \$200.5 million.

Wheat.—Wheat supplies remaining on or about August 1 in the four major wheat exporting countries, for export and carryover, totalled 1,993.4 million bushels. They exceeded by about 23 per cent the 1,620.4 million bushels of a year previously. Estimated supplies in million bushels (figures for a year earlier in brackets) were as follows: United States, 1,201 (1,087.9); Canada, 587.5 (369.2); Australia, 121.3 (61.4); and Argentina 83.6 (101.9).

Exports of wheat and wheat flour from these four countries during the August 1953-July 1954 period totalled 639.8 million bushels or about 25.1 per cent less than the 854.2 million bushels exported during the previous year. Decreases in exports (in million bushels) were as follows: Canada, from 385.5 to 255.1; United States, from 322.6 to 210.7 and Australia from 107.0 to 63.6. Exports from Argentina rose from 38.9 to 110.3.

In an address given on September 15, the Minister of Trade and Commerce noted the Dominion Bureau of Statistics' revised estimate of 377,851,000 bushels for the 1954 wheat crop. This estimate was based on conditions at September 1 and did not take account of any damage after that date and of frost and wet weather hazards from then till harvest. Indications, however, are that the crop will be of mixed quality.

The Minister stated that:

There will continue to be problems for all concerned in the marketing of Canadian grain, but I predict that some problems will also begin to be solved during 1954-55. There is reason for confidence, for example, that the farmers of the Prairie Provinces will be able to deliver all their 1954 wheat plus some of the wheat held over from the 1953 and previous crops, as well as all they have for sale of oats and barley.

Corrigenda:

In the August, 1954 issue on page 81, line 7 of the last paragraph of the article on *Trends in Food Expenditure Patterns in Canada*, read 1954 for 1953.

In the same issue, on page 90, paragraph 1, line 3 of *Some Aspects of Farm Organization, Farm Practices and Prospects for Forage Production in West Central Manitoba*, read 327,000 instead of 704,000, and on line 4 read 310,000 for 306,000.

RECENT TRENDS IN THE PRODUCTION AND DISTRIBUTION OF CANADIAN APPLES

D. W. WARE

Commercial apple production in Canada is confined to limited areas within the provinces of British Columbia, Ontario, Quebec, New Brunswick and Nova Scotia. Important changes in the apple industry of these regions have taken place during the past 25 years. A picture of the overall situation and an indication of the prospective situation are included in the following analytical review of some of these trends.

Tree Numbers.—Canada's apple tree numbers have declined since 1931 from a total of 10.2 million to 5.4 million in 1951, a reduction of 47 per cent (Table 1). This reduction of 4.8 million trees was caused mainly by a decline of 2.8 million trees in Ontario and 1.3 million trees in Nova Scotia.¹

In all provinces except Nova Scotia the greatest decline in tree numbers occurred prior to 1941. The principal reason for the decline was the increasing specialization of fruit production. The small farm orchard yielded to the commercial orchard where those varieties most suitable for the market were grown under modern conditions. Many of the original trees had been planted too close together. Research and experience have shown that production and quality are maintained at a higher level, and work such as spraying is facilitated when apple trees are planted farther apart. In Nova Scotia the sharpest decline in tree numbers occurred after 1941 because of the loss of the traditional market in Great Britain during and since World War II.

Table 1.—Distribution of Apple Trees in Canada, Census Years 1901-1951.

Province	1901	1911	1921	1931	1941	1951 ^a	Percentage of Total Trees	
							1931	1951
	—thousand trees—						—per cent—	
Nova Scotia.....	1,976	2,481	2,137	2,189	1,817	898	22	16
New Brunswick.....	675	624	557	414	147	164	4	3
Quebec.....	2,257	2,113	1,352	1,549	1,280	1,598	15	30
Ontario.....	9,542	8,784	5,545	4,342	1,887	1,509	42	28
British Columbia.....	392	1,976	2,220	1,748	1,366	1,227	17	23
Canada.....	14,842	15,978	11,811	10,242	6,497	5,396	100	100

^a Limited to firms with 25 or more fruit trees.

Source: *Census of Canada*, Vol. VI, Part I, 1951.

In 1951, 3.7 million trees or 69 per cent of the total of 5.4 million were of bearing age (Table 2). It requires about seven years for an apple tree to begin bearing fruit. If the life of a commercial apple tree is estimated at 30 years, then in 1951 there were enough non-bearing trees to maintain about the same bearing acreage until 1956 or 1957. This assumes also that the trees are fairly evenly distributed within their various age groups and there would be no abnormal losses of trees. In 1951 the proportion of new plantings in Canada was less than in 1941. There were 1.7 million non-bearing trees in 1951 compared with 2.2 million in 1941 and 2.0 million in 1931. Thus in the next ten years a smaller number of new trees will be coming into bearing than was the case in the two previous decades.

¹ Some of this decline is the result of changes in the method of recording fruit trees in the decennial census. In the 1951 census, apple trees were recorded only if the operator had 25 or more fruit trees. Previous censuses recorded all trees.

Table 2.—Percentage of Apple Trees Classified as Bearing, Canada, Census Years 1901-1951.

Province	Percentage of Total Trees in Bearing					
	1901	1911	1921	1931	1941	1951
	—per cent					
Nova Scotia.....	60.9	64.3	85.9	83.4	83.9	83.0
New Brunswick.....	67.5	63.2	73.6	81.8	61.8	66.0
Quebec.....	65.4	59.3	58.5	58.9	36.2	58.0
Ontario.....	79.1	76.4	82.1	85.4	60.4	70.2
British Columbia.....	56.3	25.8	76.3	80.5	74.6	72.6
Canada.....	73.5	65.5	78.6	80.0	65.2	69.1
	—thousand trees—					
Total number of bearing trees.....	10,909	10,464	9,283	8,193	4,238	3,732

Source: *Census of Canada*, Vol. VI, Part 1, 1951.

From the 1951 census data it appears that there are enough non-bearing trees to maintain 1951 numbers in British Columbia and Ontario for the next five or six years. Quebec and New Brunswick apple tree populations will probably rise while in Nova Scotia tree numbers will probably continue to decline, as only 17 per cent of the trees were non-bearing in 1951.

Production.—Canadian apple production has been increasing despite the decline in tree numbers. In the period 1927 to 1953 commercial apple production has ranged from a low of 7.6 million bushels to a high of 19.3 million bushels. These two extremes of production occurred in successive years, 1945 and 1946. However, the most frequent production during this 27 year period (1927 to 1953) ranged between 12.0 and 15.9 million bushels.

In the provinces of British Columbia, Quebec and New Brunswick there was a steady increase in output between 1931 and 1950; in Nova Scotia, where

Table 3.—Average Commercial Apple Production in Canada, by Provinces, Five-Year Periods, 1921 to 1950 and Annual Production, 1952 and 1953.

Province	Period						Annual	
	1921-25	1926-30	1931-35	1936-40	1941-45	1946-50	1952	1953 ^a
	—000 bushels—							
Nova Scotia.....	4,194	3,702	5,662	5,481	3,711	3,587	1,626	1,087
New Brunswick.....	96	91	119	154	249	336	300	260
Quebec.....	244	383	665	630	766	1,469	1,400	1,740
Ontario.....	3,220	1,953	2,578	2,453	1,848	2,684	2,388	2,642
British Columbia.....	3,001	4,016	4,815	5,714	5,832	8,447	6,335	5,687
Canada.....	10,754	10,145	13,839	14,431	12,405	16,522	12,049	11,416

^a Preliminary.

Source: Figures for 1921-25 obtained from Markets Information Section, Canada Dept. of Agriculture; for 1926-52 from the *Quarterly Bulletin of Agricultural Statistics*, July-September 1946 and April-June 1953; for 1953 from the Dominion Bureau of Statistics, Ottawa.

Table 4.—Apples: Average Yield per Tree, Canada and Specified Provinces, Census Years 1921-1951

Year	Canada	Province				
		B.C.	Ont.	Que.	N.B.	N.S.
		—bushels per bearing tree—				
1921.....	1.9	1.1	2.1	1.3	1.0	2.4
1931.....	1.8	3.2	1.2	1.0	1.0	2.7
1941.....	3.1	4.8	2.9	2.3	2.0	2.4
1951.....	3.6	5.7	3.3	3.3	3.3	2.1

Source: Computed from *Decennial Census of Canada, 1921 to 1951*.

large numbers of trees were removed in the last decade, average production declined sharply during this period. Ontario apple production declined between 1926-30 and then levelled off at about 2.5 million bushels (Table 3).

One of the reasons why total commercial apple production has increased although tree numbers have declined, is that yield per bearing tree has increased in all regions (especially in British Columbia) except Nova Scotia (Table 4). Improved cultural practices, specialization and the increased use of fertilizers have brought about this increased output.

Many uncertain factors, especially weather, determine the size of the apple crop. Although the yield per tree is increasing, the number and age distribution of the trees is such that apple production may increase only slightly in the next five or six years.

Varieties.—McIntosh is the principal variety grown in Canada (Table 5). In all provinces except Nova Scotia three varieties accounted for over 60 per

Table 5.—Leading Apple Tree Varieties in Commercial Orchards, Specified Provinces and Years

Variety	B.C.	Ont.	Que.	N.B.	N.S.
—per cent of all trees—					
McIntosh.....	29.1	32.5	55.3	46.9	9.3
Delicious.....	27.3	7.6	.....	1.0	6.8
N. Spy.....	0.3	23.0	.....	.....	6.7
Melba.....	.....	1.9	4.7	2.8	.....
Cortland.....	.....	2.5	3.3	18.6	3.2
Wagener.....	0.7	.....	2.4	.....	11.4
Stark.....	.....	1.9	.....	.....	8.5
Winesap.....	9.6	.....	.....	.....	.....
Fameuse.....	.....	.....	15.0	.....	.....
Jonathan.....	8.4	1.0	.....	.....	.....
Yellow Newton.....	8.0	.....	.....	.....	.....
Others.....	16.6	29.6	19.3	30.7	54.1

Sources: Provincial Censuses: Ontario and Nova Scotia 1949; British Columbia 1950; Quebec and New Brunswick 1951; 93998—2½

cent of all trees. This is in sharp contrast to the 1930's when numerous varieties were grown. The reduction in the number of varieties grown is the result of the trend to concentrate on varieties which consumers prefer and which have resulted in the largest return to the growers.

Disposal of the Crop.—The postwar utilization of the crop has changed markedly from the prewar pattern as a result of the loss of the United Kingdom market and an increased domestic demand caused by population growth.

Although average total production in the two five-year periods 1934-38 and 1949-53 was about equal, in the period 1934-38, 46 per cent of the Canadian commercial crop was exported compared with 22 per cent of the crop in the period 1949-52 (Table 6). This decrease in exports was offset by an increased demand from Canadian processors who, in the five years 1949-53, utilized an average of 22 per cent of the crop compared with 14 per cent between 1934 and 1938. Fresh sales in the domestic market averaged 7.9 million bushels in the period 1949-53 compared with the prewar average of 5.6 million, an increase of 40 per cent.

Table 6.—Utilization of Apples in Canada, Averages 1934-38 and 1949-53.

Period	Production	Fresh Exports		Total Processed		Apparent Domestic Consumption		Imports
		Quantity	Per Cent of Crop	Quantity	Per Cent of Crop	Quantity	Per Cent of Crop	
	000 bu.	000 bu.	per cent	000 bu.	per cent	000 bu.	per cent	000 bu.
1934-38....	14,093	6,483	46.0	1,965	13.9	5,645	40.1	198
1949-53....	14,277	3,128	21.9	3,213	22.5	7,936	55.6	311

Source: Compiled from data furnished by the Dominion Bureau of Statistics, and from *Crop and Price Summaries*, Canada Dept. of Agriculture, Ottawa.

However, although total sales have increased, the per capita consumption of fresh apples has varied little; it was 0.52 pounds in 1934-38 as compared with 0.56 pounds per capita in 1949-53. Therefore, this increase in domestic sales is due mainly to the growth of the total Canadian population and not to an increase in the per capita consumption of apples. Since it is reasonable to expect Canada's population to grow for some time to come it would appear that the Canadian apple grower will become less and less dependent on the export market except in years of bumper crops.

LAND UTILIZATION AND RATE OF LAND IMPROVEMENT ON LANDS IN THE SASKATCHEWAN RIVER DELTA

J. P. HUDSON

Agricultural development possibilities in the great inland delta of the Saskatchewan River are under study by officials of the Canada Department of Agriculture. A small portion of this delta, known as the Carrot River Reclamation Project or the Pasquia Area, comprises about 135,000 acres of land in the Manitoba section of the area. It lies southwest of the town of The Pas and is bordered on the east and south by the Pasquia River, and on the north by the Carrot River, and extends westward to the Manitoba-Saskatchewan boundary. Some settlers are already established and the administrators of the Prairie Farm Rehabilitation Act are directing the construction of a dike and drainage system to protect the area from floods and reclaim some acreage for further settlement.

As one of the initial steps in planning the development of the larger delta area, the Economics Division in 1953 conducted a farm business study among

the settlers of the Pasquia Area. Twenty-seven farms were visited and some of the data obtained from these farmers form the basis of this article.

Some farming has been carried on along the banks of the Saskatchewan River at The Pas since the days of the fur trade. However, the first significant agricultural settlement in the Pasquia Area began during the latter years of settlement under the Dominion Homestead Act when homestead rights were extended for lots along the Carrot River. No further homesteads have been allowed since the transfer of natural resources to Manitoba in 1929. Some settlement continued until 1945, mostly through private purchases of river lots. In 1945 the Provincial Government offered the better-drained portions of the area for settlement on a one-quarter crop-share basis. Grazing and haying permits were also let on lands unsuitable for cultivation and a general

Table 1.—Land Utilization According to Number of Years of Farming, 27 Farms, Pasquia Area, Manitoba, 1953

Land Utilization	Number of Years of Farming			All Farms
	7 or Fewer	8-21	22 or More	
Number of farms.....	14	6	7	27
—average number of acres per farm				
Improved Land—				
Wheat and flax.....	26	15	25	24
Oats.....	16	28	37	24
Barley.....	85	96	95	90
Improved hay and pasture.....	4	5	18	8
Other crops ^a	3	10	19	8
Summerfallow.....	101	44	66	80
Temporarily idle.....	29	47	57	40
New breaking.....	10	15	4	9
Farmstead.....	2	4	5	3
Total.....	276	264	326	286
Unimproved Land—				
Wet meadow.....	158	168	268	189
Willow scrub.....	28	10	.....	17
Light bush.....	32	41	.....	26
Heavy bush ^b	14	24	24	18
Non-arable swamp.....	20	7	.....	12
Total.....	252	250	292	262
Total farm area.....	528	514	618	548

^a Fall rye with some garden crops on field scale.

^b Mostly levee bush along the Carrot River.

permit could be obtained for grazing, haying and cropping privileges. No new crop-share leases have been let since the Dominion-Provincial agreement for diking and draining the area was made in 1952. In 1953 about 31,000 acres within the Project area were held on a crop-share lease basis.

Land Utilization.—Commercial production of cereal crops predominates throughout the area. The average size of the farms visited was 548 acres, of which 52 per cent was improved (Table 1). On the average, wheat was grown on about seven per cent of the cropland or 19 acres per farm. All but six farms grew some wheat, but only one grew flax in 1953. Coarse grains were sown on 40 per cent of the cropland. Barley was the most important crop, having almost double the acreage of all other cereals combined. Tame hay and pasture were seriously affected by the inundation of the farm lands during most of the summer of 1948. Some reseeding of tame hay and pasture had been

done on 11 of the farms visited in 1953; the average acreage per farm was small—just three per cent of the cropland. Other crops, mostly rye, accounted for a further three per cent of the cropland.

The acreage in summerfallow is determined by the weather. Part of the cropland is likely to be summerfallowed if the spring season is wet and late. In 1953, 28 per cent of the cropland was in summerfallow compared with 19 per cent in 1952. Portions of a farm which may be too wet even to summerfallow become temporarily idle; this area of idle land fluctuates considerably from year to year. In 1953, idle acres were found on a very large number of farms and averaged 14 per cent of the cropland, or 40 acres per farm.

The unimproved land provided a little hay and some pasture. About 90 per cent of this unimproved land had remained in a virgin state because of its wet condition. Wet meadow which would be suitable for culture after the installation of drainage works comprised about 72 per cent of the unimproved area. The light bush and willow scrub required very little clearing and could be broken up without difficulty once the saturated condition was corrected. Most of the heavy bush is on the levee land along the Carrot River. Because of its strategic location as a building site and its usefulness in stabilizing the

Table 2.—Percentage of Cropland Improved per Year in Specified Periods, According to Years of Farm Occupancy, 27 Farms, Pasquia Area, Manitoba, 1953

Years of Occupancy	Number of Years on Farm			All Farms
	7 or Fewer	8-21	22 or More	
Number of farms.....	14	6	7	27
	per cent			
Improved when acquired.....	44.0	10.8	.....	23.9
First year.....	16.0	4.4	3.6	9.9
Second year.....	14.4	5.6	5.5	9.9
Third year.....	12.3	9.2	4.1	9.2
Fourth year.....	9.9	3.5	1.8	6.1
Fifth year.....	2.1	4.3	3.2	3.4
Sixth to tenth.....	1.3	31.1	25.5	15.0
Eleventh to fifteenth.....	.....	23.2	34.4	15.3
Sixteenth to twentieth.....	.....	5.9	4.9	2.3
Twenty-first and after.....	.....	.....	16.9	5.0

river bank itself, the heavy bush will not likely be cleared. The farmers who owned river lots indicated that they did not intend to remove the heavy tree cover to extend the area of their cultivated fields.

Rate of Land Improvement.—Table 2 indicates the rate at which the settlers have brought their land into production. By 1943, only 25 per cent of the 1953 total cropland on the farms visited had been improved. There were two principal reasons for the slowness of improvement: a large part of the area was not opened for settlement until 1945, and development was retarded by an almost complete lack of marketing facilities.

For the first settlers, farming opportunities were very few because of the limited market area and difficulties in marketing their produce. There was a small local demand for feed for teams working in bush camps or in mines; all other grain had to be either bagged or loaded in carload lots at The Pas for rail shipment. The settlers who produced more than enough grain to satisfy their own needs and the local market planned their cropping program so as to ensure the harvesting of carload lot quantities of grains. Since 1943 the rate of land improvement has accelerated, particularly since 1947 when a grain elevator was built at The Pas.

Settlers' progress in this, and in other similar areas likely to be developed in the future, will be closely related to the experience of those who have been on their farms since 1945. But future progress will not be directly comparable with past development once protective dikes are built and major drainage works are functioning. Figures indicate that the settlers who commenced their operations after 1945 have improved an average of 52 acres per year. All but one had completed their improvements within three years. The size of the individual parcels improved in a single year ranged from seven to 240 acres.

Financial Progress.—The current financial position of the operators cannot be attributed to farm production alone. Nevertheless, the net worth statement presented in Table 3 does illustrate the success achieved by the operators in building up their farm assets and stabilizing their farm capital. The first settlers approached their farming operations as an "off season" opportunity to

Table 3.—Net Worth Statement at Start and in 1953 According to Number of Years on Farm, 27 Farms, Pasquia Area, Manitoba

	Number of Years on Farm						All Farms	
	7 or Fewer		8-21		22 or More			
	At Start	1953	At Start	1953	At Start	1953	At Start	1953
Number of farms.....	9 ^a		6		7		22	
	dollars							
Assets—								
Cash on hand.....	3,642	515	421	96	664	771	1,816	482
Land ^b	1,555	4,089	217	6,334	607	10,357	889	6,695
Buildings.....	378	1,428	250	3,008	86	6,114	250	3,350
Machines.....	3,312	4,369	926	6,083	357	9,143	1,721	6,356
Livestock.....	422	851	908	1,708	558	2,286	598	1,544
Grain and supplies.....	24	96	179	246	4	217	60	175
Personal ^c	431	456	92	600	143	3,164	247	1,357
Total.....	9,764	11,809	2,993	18,075	2,419	32,052	5,581	19,959
Liabilities—								
Real estate.....	300	300	20	666	153	343	177	414
Mortgages, loans ^d		805		500	571	357	182	579
Personal loans, bills and accounts.....	289	695	500			29	254	324
Total.....	589	1,800	520	1,278	724	729	613	1,317
Net worth.....	9,175	10,009	2,473	16,747	1,695	31,323	4,968	18,642

^a Five farms were omitted from this calculation because they were not self-contained units.

^b For leaseholders, this item is their equity in land improvements.

^c Includes stocks, bonds, household goods and other non-farm property.

^d Includes amount owed on machinery, bank loans and loans from other lending institutions.

establish a home and a permanent stake in the country. The opportunities were many for seasonal and steady employment at bush work, mining, trapping, freighting, railroading, fishing and shipping. These employment opportunities no longer exist to the same extent as they did in the past. Today a settler must go farther afield to obtain off-farm work and such work usually interferes with plans for farm development. In 1953 a few of the settlers were employed in occupations other than farming for part of the winter season. To a great extent this work merely provided funds for living expenses during the winter. Any savings would be used in farming operations but in the main the settlers depended on farm production as the principal source of their annual income.

A significant feature of the financial condition of the farmers is the very high ratio of net worth to liabilities. Used as an indicator of long-time solvency

—the ability of the farm to withstand financial reverses over a long period—the ratio would indicate that the farmers are in a stable financial position. This is true only for those who have been on their farms the longest. Their capital equity is very high and the total amount and incidence of pressing liabilities are low but the total resources consist mainly of fixed and working capital. Current assets, represented by cash on hand, marketable livestock, grain and bonds, are small relative to current cash requirements. Operating and living expenses could quickly use up all the current assets and bring about a forced liquidation of some of the fixed and working capital assets.

Farmers established on their farms for less than seven years were in a more vulnerable position than other farmers. Their total net worth position has improved a little but their liabilities have also increased in relation to their total resources. Thirty-seven per cent of their original assets were in cash but by 1953 this cash reserve had been reduced to only a little over four per cent of the assets. A knowledge of the particular circumstances of the settlers and the conditions under which they have operated supports this analysis. Many of the newest settlers came to the area with some equipment and livestock and enough cash to get established. They took over existing crop-share leases and paid cash for the improvements made by the previous lessee who assigned his lease rights. Production in the subsequent years was not enough to enable them to maintain their cash reserves and at the same time maintain and improve their farms. Some of their living expenses were met from off-farm work and their present financial position would be seriously affected by reductions in output or increases in costs.

In order to obtain a government crop-share lease a man had to be a bona fide farmer. Consequently, the newest settlers came to the area with enough equipment and cash to enable them to improve their holdings as fully as possible. In some cases, they have improved a larger area than they were able to handle at harvest time under the unfavourable weather conditions which prevailed over most of Western Canada in recent years.

For the most part, the natural hazards to grain production in this area are those brought about by variable weather conditions which result in fields saturated with water, drenched crops, delayed harvests and crop losses through duck degradations.

An improvement in the general environment would lessen the adverse effects of weather and considerably improve the prospects for agriculture in the area. The reclamation works alone will not eliminate all the problems of crop production. Problems of management will still confront the settler and the individual's progress will depend on his ability to solve these problems. Maintenance of soil fertility and the prevention of soil deterioration through drifting and erosion will likely present a challenge to his managerial ability.

MARKETING PRACTICES OF CATTLE RANCHERS IN SOUTHWESTERN SASKATCHEWAN

S. R. BURKELL

Cattle ranching constitutes an important agricultural development in certain parts of southwestern Saskatchewan. It represents one of the best alternative uses of land in areas where peculiar conditions of soil, topography and climate make crop production unprofitable. Each year large numbers of slaughter and feeder cattle are marketed from this area.

To obtain some detailed information on the cattle ranching enterprise in this region, the Economics Division co-operated with the Saskatchewan Assessment Branch in a field survey conducted during the fall of 1953. The survey

Table 1.—Numbers of Cattle Marketed by Classes, 38 Ranches, Southwestern Saskatchewan, 1953

	Number	Per Cent
Calves (3·0 to 7·5 months).....	1,022	25·2
Yearling heifers (9·0 to 19·0 months).....	283	7·0
Yearling steers (9·0 to 19·0 months).....	963	23·8
2-year heifers (24·0 to 31·0 months).....	268	6·6
2-year steers (24·0 to 31·0 months).....	611	15·1
3-year steers (39·0 to 42·0 months).....	253	6·2
Cows (over 2 years).....	631	15·6
Bulls (over 2 years).....	20	0·5
Total	4,051	100·0

covered the major cattle ranching areas of southwestern Saskatchewan—Cypress Hills, Sand Hills, Govenlock, Eastend and Shaunavon areas—which include three types of native grasslands: submontane, mixed prairie and short grass associations. A total of 38 ranchers were interviewed.

Some of the findings relating to the marketing practices followed by these ranchers are presented in this article. It deals specifically with the marketing of cattle “off first hands” rather than the secondary steps in the marketing process.

Classes of Cattle Marketed.—Marketings from the 38 ranches in 1953 totalled 4,051 head, or an average of 107 head per ranch. These can be divided into classes according to age and sex of the animals (Table 1). The age classification, however, is somewhat misleading since some animals are either “short” or “long” in their age groups. About 94 per cent of the animals considered as calves were between 6·0 and 7·5 months of age; 89·1 per cent of the yearling heifers were between 17 and 19 months of age; 98·5 per cent of the yearling steers were between 17 and 19 months of age; all the two-year old heifers and steers were between 24 and 31 months of age; all the three-year old steers between 39 and 42 months of age and all the cows and bulls were over two years. Sales of cattle one-year old and younger constituted over one-half of the total marketings in 1953.

Time of Marketing.—The four months, August to November, accounted for 97·8 per cent of the total marketings, the heaviest month being October (Table 2). The October peak was the most pronounced for sales of calves and three-year old steers, but the September-October period was the pronounced peak period for sales of yearling and two-year old steers. Sales of cows and one- and two-year old heifers were spread more evenly throughout the four-month period. No marked variation in time of marketing was found between ranches in the different grassland associations.

Table 2.—Seasonality of Cattle Marketings, 38 Ranches, Southwestern Saskatchewan, 1953

	Aug.	Sept.	Oct.	Nov.	Other Months
	per cent				
Calves.....	4·7	1·6	68·6	25·1	.....
Yearling heifers.....	.....	34·4	24·7	32·9	8·0
Yearling steers.....	.....	51·1	37·0	10·5	1·4
2-year heifers.....	29·8	14·2	45·1	6·0	4·9
2-year steers.....	6·8	37·2	45·2	10·8	.....
3-year steers.....	.....	13·4	86·6	.....	.....
Cows.....	40·1	11·4	27·6	14·1	6·8
Bulls.....	8·3	16·7	50·0	25·0	.....
All cattle.....	10·5	24·2	57·7	15·4	2·2

Table 3.—Average Market Weights of Cattle by Class and by Type of Grassland, 38 Ranches, Southwestern Saskatchewan, 1953

	Submontane	Mixed	Shortgrass	Average for all ranches
	—pounds per animal—			
Calves.....	391	387	372	381
Yearling heifers.....	602	668	725	672
Yearling steers.....	708	671	743	717
2-year heifers.....	857	907	909	884
2-year steers.....	952	1,059	1,019	994
3-year steers.....	1,221	1,200	1,182	1,194
Dry beef cows.....	1,108	1,072	1,084	1,091
Wet beef cows.....	1,114	1,171	1,032	1,146
Old bulls.....	1,436	.....	1,492	1,464

Ranch cattle gain in weight through the spring and summer months and reach a peak in late summer or early fall. This coincides with the end of the best range conditions. As animals are likely to lose weight when the range begins to deteriorate, the common practice is to market at the end of the best range conditions. Grass-fat cows and two-year old heifers are normally marketed first, then the younger stock in the feeder classes. The cull cows are marketed after weaning.

Market Weights.—The survey did not provide the possibility of studying the weights of individual animals. All the information was obtained on the basis of the average weight of each lot of cattle marketed by the ranch. Practically all cattle sales were made directly from native range. The average weights of animals marketed from the 38 ranches included in the survey are shown in Table 3. No marked variation in average weight was evident for cattle marketed off the different types of grassland. A small proportion of the marketings in certain classes were "short" of the average age. When these were eliminated from the sample, the average weight of calves approached 400 pounds; yearling heifers, 700 pounds; and yearling steers, 720 pounds.

Size of Lots Marketed.—Data on sizes of lots in which particular classes of cattle were marketed off ranches in 1953 are summarized in Table 4. These data do not represent actual consignments but simply the total numbers marketed per ranch arbitrarily divided into what would normally constitute a carload lot.¹ Over one-half of the ranch consignments consisted of a carload lot or more.

Table 4.—Numbers of Ranches Consigning Various Classes of Cattle According to Size of Consignment, 38 Ranches, Southwestern Saskatchewan, 1953

	Number of Carloads					
	0.5 or fewer	1	2	3	4	5 or more
	—number of ranches—					
Calves.....	3	5	6	2	.....	.....
Yearling heifers.....	12	3	.....	1	.....	.....
Yearling steers.....	8	8	4	2	.....	1 ^a
2-year heifers.....	15	6	.....	.....	.....	.....
2-year steers.....	7	3	5	2	1	.....
3-year steers.....	3	1	2	2	.....	.....
Dry beef cows.....	15	11	2	.....	.....	1
Wet beef cows.....	5	2	1	.....	.....	.....

^a One ranch reported a consignment of yearling steers consisting of ten carloads.

¹Numbers of each class of cattle that normally constitute a carload are as follows: calves, 45-50, yearling heifers, 30-40; yearling steers, 25-35; 2-year steers, 3-year steers or cows, 20-25.

The fact that ranch consignments of individual classes of cattle were large and seasonal is very significant from the standpoint of feeder buyers and other marketing agencies. Availability of large uniform lots of cattle for direct purchase helps to promote the feeder livestock trade; in general, however, in Saskatchewan several producers have to pool their marketings to make up a shipment.

Cattle Prices.—The average ranch price for the classes of cattle and the numbers sold at the various prices in 1953 are shown in Table 5. As in the case of cattle weights, prices were not reported on an individual animal basis but as the average price per lot sold. The range in prices received by the ranchers remained fairly constant throughout the marketing period. Lighter or heavier volumes of sales were not associated with pronounced fluctuations in prices; some cattle were sold at each end of the price range in each of the four months. Nor did the size of consignment appear to have any direct influence on the prices paid. It would seem then that the variations in price among ranches for the same classes were due to quality or other factors.

Table 5.—Numbers of Cattle Sold by Class and Price, 38 Ranches, Southwestern Saskatchewan, 1953

	Ranch Price in Cents per Pound						Average price
	5.0-7.5	8.0-10.5	11.0-12.5	13.0-14.5	15.0-16.5	17.0-18.0	
	—numbers—						
Calves.....				5	731	286	16.3
Yearling heifers.....		1	24	98	154	6	14.8
Yearling steers.....			15	48	898	2	15.6
2-year heifers.....		43	18	171	36		13.2
2-year steers.....		1	10	12	475	113	15.2
3-year steers.....				7	206	40	16.4
Dry cows.....	34	477	22	7			9.0
Wet cows.....	38	21					7.2
Old bulls.....	2	6	2	1	1		9.8

Published price quotations are based entirely on prices at the central markets (public stockyards, packing-houses and local auctions). These price quotations are not representative of ranch cattle sales as a large proportion of the ranch marketings are channelled through drovers. The foregoing price data, therefore, can be used to supplement published price information, particularly for studies at the ranch level.

Market Outlets and Transportation.—As mentioned previously, most of the cattle were sold to drovers, many of whom represented Ontario feeders. Sales were made when the drover visited the ranch but weighing was done at the rail shipping points. Trailing was the predominant method of transporting cattle from the ranch to the shipping point. Up to two days were required to trail cattle from the more remote ranches in the Cypress Hills. Trucks were used to some extent, particularly in moving calves and cull heifers and cows.

Only a small proportion of the cattle marketings were channelled through central markets or local auctions. Ranchers who elected to sell cattle through public stockyards chose the stockyards in Calgary. Trucks were employed to move the cattle to Calgary, about 250 miles from Maple Creek, and trailing, as well as trucking, to move cattle to local auctions.

CONSUMERS' OPINIONS OF SIDE BACON

CHARLOTTE I. JOHNSTON

Sides of "breakfast" bacon is one of the main pork products and makes up nearly one-fifth of the wholesale cuts of the hog carcass. Knowledge of what type of side bacon Canadians want is therefore important to both producers and packers and assists them in supplying the kind of bacon consumers like.

Method of Study.—Two investigations of consumers' preferences concerning side bacon were undertaken, one at the Royal Winter Fair in Toronto from November 13 to November 21, 1953, and the other at Le Salon National de l'Agriculture in Montreal from January 27 to February 4, 1954.¹ As those rating the bacon samples saw but did not taste them the opinions obtained were based on appearance only.

Six samples of bacon were displayed at one time and then replaced by another set after three days. As each exhibition lasted nine days, three sets of six, or 18 samples, were shown in Toronto and 18 were shown in Montreal. Each sample consisted of three pairs of two matched slices.

Although the sets of samples were not identical a wide range of leanness was represented in each set. The leanest sample in a set had at least twice as large a percentage of lean area as the fattest sample. Lean areas of the 36 samples ranged from 13 to 51 per cent of total areas. Each set contained a sample cut near the shoulder. This sample was wide in relation to its length. The lean areas ranged from 27 to 37.5 per cent of total areas and the lean was concentrated in patches at one side of the slice in contrast to the more even dispersion of fat and lean in strips, which is usual in side bacon.

Each person visiting the exhibit was asked to complete a card rating each sample as "good", "fair", or "poor" as well as "acceptable" or "not acceptable" and to state his age group (over or under 21 years of age) and sex. Addresses were also asked of some of the respondents at the Royal Winter Fair and of all at Le Salon National de l'Agriculture. About 4,200 answered the questionnaire at each exhibition. After rejections because of incompleteness and inconsistency, data were used from 7,930 cards. Each fully completed card gave two ratings, one for quality and one for acceptability, to each of the six samples, but a card was not rejected for incompleteness if four samples each received even one rating. Thus, the different samples had unequal total numbers of ratings. However, each sample received more than 1,000 quality ratings and 800 acceptability ratings.

Quality and Acceptability.—The ratings given on the basis of quality fell into three almost equal groups, that is, about one-third of all the ratings of the 36 samples were "good", about one-third were "fair" and one-third were "poor".

Roughly 55 per cent of the acceptability ratings were "acceptable" and 45 per cent "not acceptable". It was not surprising that almost all the samples rated "good" were also "acceptable" and that those rated "poor" were usually "unacceptable".² Of those rated "fair" in quality more than a third were "unacceptable". Almost one-fourth of the respondents who rated at least two samples "fair" classed one sample "acceptable" and another "unacceptable". Evidently many subdivide "fair" quality into two grades and demand that bacon shall be better than just "fair" before they will accept it.

¹The project was carried out jointly by the Live Stock and Live Stock Products Division, the Consumer Section and the Economics Division, of the Department of Agriculture.

²Ninety-nine per cent of the samples rated "good" which were also given an acceptability rating were marked "acceptable" and 96 per cent of the samples rated "poor" which were also given an acceptability rating were marked "unacceptable".

Table 1.—Quality Ratings ^a Related to Characteristics of Bacon Slices Shown at the Royal Winter Fair, Toronto, November 1953, and at Le Salon National de l'Agriculture, Montreal, January-February 1954

Quality Rating ^a (rank)	Characteristics of Bacon Slices	
	Percentage Lean ^b	Ratio of Length to Width
1-6	37.8	6.2:1
7-12	37.3	6.8:1
13-18	32.0	5.6:1
19-24	27.5	5.5:1
25-30	25.2	5.4:1
31-36	16.9	5.3:1
Average	29.5	5.8:1

^a Percentage "good" minus percentage "poor" of all ratings of the sample as to quality.

^b The lean area as a percentage of the total area of each sample was computed.
The group average is the sum of the six percentages divided by six.

Comparison of Samples.—A rating was obtained for each sample by subtracting the percentage "poor" from the percentage "good" of all the ratings as to quality which were given to the sample. The sample was then ranked according to that rating. For example, the sample ranking first obtained the highest quality rating (80), as it was rated "good" by 82 per cent and "poor" by only two per cent of those who rated the sample. At the other extreme the sample with rank 36 had a quality rating of -72 because only five per cent of its ratings as to quality were "good" and 77 per cent were "poor".

Respondents regarded leanness in bacon as particularly desirable (Table 1 and Figure 1). At least 32 per cent of the area was lean in each of the eight highest ranking samples. None of the eight lowest ranking samples had as much as 24 per cent lean.

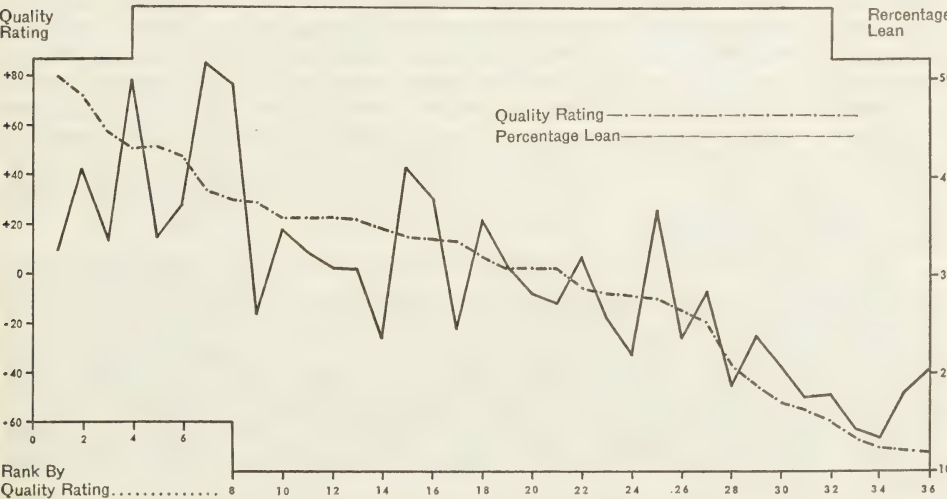


Figure 1.—Quality rating and percentage lean of bacon samples, Royal Winter Fair, Toronto, November, 1953 and Le Salon National de l'Agriculture, Montreal, January-February, 1954.

Nevertheless, there were some marked differences between the ranking of samples according to quality and their ranking according to leanness. The sample ranking first was only 32 per cent lean but two of the three leanest samples ranked seventh and eighth; over 50 per cent of the ratings of these two samples were "good" but 24 per cent were "poor". The reasons for the numerous "poor" ratings were no doubt associated with features common to both samples. The slices were quite narrow; the length was over eight times the width, and thus the fat between the wider strips of lean was very narrow. A number of people were heard to say that the lean would be hard when cooked because of the small quantity of fat near it.

Another type of bacon not highly regarded even when it was rather lean was that cut near the shoulder. Its characteristic appearance, with fat and lean well separated and on opposite sides of a wide slice, has already been noted. Three samples with lean areas of 35 per cent or more ranked 16th, 18th and 25th by quality rating (Figure 1).

In addition to leanness the relation of the length to the width of the slice was associated with rating. A length-width ratio of at least 6:1 characterized all but two of the 12 samples ranking highest whereas the lengths of all except one of the 12 samples of lowest rank was less than six times the width.

The one sample of highest rank at each exhibition deserves special attention. Each was rated "good" by 82 per cent of those who judged their quality but, no other sample was marked "good" by more than 68 per cent of those rating them. The two samples were quite similar in general appearance, the lean made up 32 and 41 per cent of the total areas, and was well distributed in strips throughout the slices. In addition, each was quite straight and varied little in width.

Influence of Place of Residence, Age Group and Sex on Ratings.—Ninety-six per cent of the 550 addresses shown on records returned at the Royal Winter Fair were in Ontario. Almost all of those who judged the bacon samples at Le Salon National de l'Agriculture lived in the Province of Quebec and 96 per cent were French speaking.

To determine whether residents of Ontario and of Quebec differed in their opinions of bacon, the ratings of similar samples from the two exhibitions were compared. By matching samples shown in Toronto with those shown in Montreal it was possible to secure 36 pairs which were alike in percentage lean, ratio of length to width, distribution of lean and fat, and general form. One sample from one exhibition was sometimes matched with several from the other. Only ratings given by women were compared so that possible differences attributable to age and sex were excluded. The percentages of "good" ratings received by the two members of 13 pairs differed by less than five. Greater differences in the percentages of "good" ratings were found among the other 23 pairs.

One pair of samples was exhibited at Toronto and the other at Montreal; the variations in women's ratings was no greater than that for the ratings of 28 similarly selected pairs of samples exhibited together. The cards returned at Le Salon National de l'Agriculture indicated that there was little difference in the preferences for bacon expressed by those who lived in Montreal (55 per cent of the respondents) and those who lived elsewhere in the Province of Quebec. So, the differences in the environmental background of people attending the two exhibitions had little if any effect on the preferences expressed for bacon.

At the Royal Winter Fair those under 21 differed significantly from those over 21 in their ratings of only three samples.¹ Two of these were cuts taken

¹Significant at the five per cent level by the Chi-square test.

near the shoulder; both were rated better by the younger people. At Le Salon National de l'Agriculture those under 21 years of age gave better quality ratings to six samples than did the older people; two samples were shoulder cuts, and the others all had less than 19 per cent lean. Evidently those under 21 years of age were less critical of fatness and of fat-lean distribution in bacon than were those in older age groups.

Men and women gave similar quality ratings to all but three of the samples shown in Toronto. However, they differed in rating three samples. Women gave better ratings to a sample which was only 28 per cent lean but which was, in general appearance, rather like the favorite sample shown at the Royal Winter Fair. Two shoulder cuts were called "poor" by a higher percentage of women than of men and the latter were also more inclined to rate these samples "good". However, the shoulder cuts shown in Montreal were not rated more highly by the men than by the women.

Conclusions.—The results of the survey indicate that most consumers like their side bacon to be at least 30 per cent lean, and to have the lean and fat well distributed in the slice. Slices about six times as long as they are wide and which are straight and uniform in width are preferred. Preferences do not appear to be influenced much by place of residence, age group or sex.

LAND USE IN THE PEACE RIVER AREA OF BRITISH COLUMBIA, 1952

R. H. CAMPBELL

Great differences in the acreages in various crops exist among farms located on different types of soil in the Peace River area of British Columbia. This article will describe the patterns of land use on some of these farms. It is based on findings made through a business study of 147 farms, conducted by the Economics Division in 1953.

Many of the soils in this area are quite similar in characteristics which affect their productivity and suitability for crop production. Therefore, three general soil classes were selected for the purpose of this study—black, degraded black and grey wooded—each consisting of several soil series similar in many characteristics. The black soils have developed on non-saline parent material in areas characterized by a long and continuous absence of tree cover. The degraded black soils are found in areas in which the woodland vegetation has been neither as dense nor as well established as in the grey wooded areas; they may be considered as transitional in relation to the other two classes. The grey wooded soils lie in areas of mixed deciduous and evergreen woodland vegetation.

The number of acres per farm of improved and unimproved land used for the production of the various crops and for other purposes is shown for each soil class in Table 1.

In terms of total and improved acreage per farm, farms on the black soils were the largest, having 431 acres, of which 311 were improved. Farms on the degraded black soils comprised 386 acres, of which 186 were improved; and those on the grey wooded soils had corresponding acreages of 319 and 149.

As unimproved land is not very important for agricultural production in this area, consideration of land use on the different soils is confined mainly to cultivated land. The cultivated acreages per farm on the degraded black and grey wooded soils were only about 60 and 47 per cent respectively of the acreage cultivated on farms on the black soils. Those on the degraded black and the grey wooded soils had, on the average, only about 45 per cent of the land under cultivation, compared with about 70 per cent for farms on the black soils.

The larger cultivated acreage and the higher percentage of land under cultivation on the black soils, not only indicated greater physical size but could also be regarded as evidence that these farms are in a more advanced stage of development. Farms on the grey wooded soils appear to be in an early stage of development, and those on the degraded black soils in an intermediate stage of development.

The total cultivated acreage is the primary determinant of the size of income on crop-producing farms. Proper management plays a no less important role; care must be taken in the selection and combination of crops to be grown and in the acreages to be allotted to each of these crops. On the farms included in the survey the grain crops occupied a larger acreage than

Table 1.—Land Use^a by Soil Class, Peace River Area of British Columbia, May 1952 to April 1953

	Soil Class			All Farms
	Black	Degraded Black	Grey Wooded	
Number of farms.....	48	54	45	147
	—acres per farm—			
Cultivated—				
Wheat.....	70.5	26.8	14.6	37.3
Barley.....	72.3	37.9	15.5	42.3
Oats.....	30.3	29.3	34.0	31.1
Other grain crops ^b	2.7	4.7	4.2	3.9
Oats bundles.....	11.1	4.4	3.2	6.2
Legume seed.....	19.6	16.0	20.8	18.6
Grass seed.....	5.4	0.3	5.5	3.6
Hay.....	5.3	11.1	10.0	8.9
Improved pasture.....	9.1	11.1	3.3	8.0
Summerfallow.....	78.8	38.6	32.9	50.0
Total.....	305.1	180.2	144.0	209.9
Improved—				
Other improved ^c		0.6	1.3	0.6
Farmstead.....	6.0	5.0	4.1	5.1
Total.....	311.1	185.8	149.4	215.6
Unimproved—				
Wild pasture.....	45.0	80.9	63.1	63.7
Cleared for breaking.....	4.4	4.0	6.1	4.7
Bush.....	56.8	98.6	96.9	84.5
Waste.....	13.3	16.8	3.1	11.5
Total.....	119.5	200.3	169.2	164.4
Total farm area.....	430.6	386.1	318.6	380.0

^a Includes both owned and rented land.

^b Includes rye, flax, mixed grains, and buckwheat.

^c Mainly land newly broken but not in crop.

all other crops combined, for each of the soil classes, and were followed by summerfallow, forage seed crops (mostly alfalfa and creeping red fescue), feed crops (oats bundles and hay), and improved pasture.

The acreage in coarse grains (barley and oats) exceeded that in wheat for all soil classes and except for the black soil class, barley and oats acreages were each larger than the wheat acreages. On the black soils barley and wheat acreages were nearly equal and each was more than twice the oats acreage; they were also about equal on the grey wooded soils, but each was

less than half the oats acreage. On the degraded black soils the acreage in barley was larger than that in either oats or wheat and wheat occupied the smallest acreage of the three grain crops.

Most of the forage crops were grown primarily for seed. A much larger amount of land per farm was allotted to legume seed crops than to grass seed crops. Almost the same acreage was sown to legume and grass seeds on the black as on the grey wooded soils. However, on the degraded black soils a smaller amount of land was in legume seed crops and almost none in grass seed crops. On the black soils the acreage per farm in forage crops cut for hay was about half of that on the other soils. Improved pasture on the black

Table 2.—Percentage of Cultivated Land^a Used for Various Crops, According to Soil Classes, Peace River Area of British Columbia, May 1952 to April 1953

	Soil Class			All Farms
	Black	Degraded Black	Grey Wooded	
Number of farms.....	48	54	45	147
—per cent of total acres cultivated—				
Grain Crops—				
Wheat.....	23.1	14.9	10.1	17.8
Barley.....	23.7	21.0	10.8	20.1
Oats.....	9.9	16.3	23.6	14.8
Rye.....		0.2	1.5	0.4
Flax.....	0.7	2.2	1.0	1.3
Other grain crops ^b	0.2	0.2	0.4	0.2
Oat bundles.....	3.6	2.5	2.2	3.0
Total.....	61.2	57.3	49.6	57.6
Forage Crops—				
Legume seed.....	6.4	8.9	14.5	8.9
Grass seed.....	1.8	0.2	3.8	1.7
Hay.....	1.8	6.1	7.0	4.2
Improved pasture.....	3.0	6.1	2.3	3.8
Total.....	13.0	21.3	27.6	18.6
Summerfallow.....	25.8	21.4	22.8	23.8
Total cultivated land.....	100.00	100.0	100.0	100.0

^a Includes both owned and rented land.

^b Includes mixed grains and buckwheat.

soils, however, occupied only about one-third as much land as on other soils. Legumes and grasses for all purposes—including seed production, hay and pasture—were grown in about equal amounts per farm on each type of soil.

As the area of cultivated land per farm differed considerably among the three soil classes, the relative importance of various crops in the use of land, according to different soil classes, is not indicated by the acreages in each crop alone. In other words, even though a crop occupied the same acreage on two farms, or groups of farms, it would be relatively more important in the use of land on the farms where its acreage formed a larger proportion of the total acreage under cultivation. The differences among soil classes in their capacity to produce various crops is illustrated in Table 2, which summarizes the proportions of the total cultivated land used by various crops on different types of soil.

Grain crops, consisting largely of wheat, barley, and oats, were grown on half or more of the cultivated land on each soil class. These crops occupied 61 per cent of the cultivated land on the black soils, which was only slightly more than for the degraded black soils but considerably more than for the grey wooded soils. On the black soils wheat and barley occupied about 23 and 24 per cent, respectively, of the cultivated acreage, whereas oats accounted for only about 10 per cent. This situation contrasts with that on the grey wooded soils where wheat and barley took up about 10 and 11 per cent, respectively, and oats about 24 per cent of the cultivated area. Differences were less marked on the degraded black soils where wheat and oats were grown on about 15 and 16 per cent and barley on 21 per cent of the cultivated area.

Forage crops were grown on a much smaller part of the cultivated land than grains. They occupied 13, 21, and 28 per cent of the cultivated land for the black, degraded black, and grey wooded soil classes respectively. Legume seed, most of which was alfalfa, was grown on about half of the land in forage crops in each of the soil groups. Hay and pasture on the degraded black soils and hay on the grey wooded soils were the only other forage crops of any importance.

The proportion of the cultivated land used for grain crops was larger and that used for forage crops was smaller on the black than on the other two types of soil. On the grey wooded soils, on the other hand, the percentage of cultivated land used for grain crops was smaller, and that used for forage crops was larger than for the other two soil groups.

On the degraded black soils the proportion of the cultivated land in grain crops was smaller than on the black and larger than on the grey wooded soils, but the proportion in forage crops was larger than on the black and smaller than on the grey wooded soils. The percentage of cultivated land in summer-fallow was 26 per cent for the black soils, 23 per cent for the grey wooded soils and 21 per cent for the degraded black soils.

PUBLICATIONS OF THE ECONOMICS DIVISION

Appraisal of Dryland Farming in the Special Areas of Alberta. Darcovich, William. February 1954. pp. 37.

One in a series of studies sponsored by a committee appointed to investigate the feasibility of irrigating a large acreage within the Special Areas of Alberta.

The report discusses the *Agricultural Problem in the Special Areas*, presents an *Appraisal of the Economic Efficiency of Farms in the Project Area* and concludes with an *Indication of Public Investment Possibilities*.

Canada Weights, Measures and Conversion Factors for Agricultural Products. July 1954. pp. 45.

A "provisional" bulletin prepared by the Economics Division in co-operation with the Agriculture Division of the Dominion Bureau of Statistics, the commodity divisions of the Marketing Service of the Canada Department of Agriculture, and the trade. It represents an attempt to gather together from various sources weights, measures and conversion factors commonly required in calculations pertaining to agricultural products.

UNITED NATIONS PUBLICATIONS

Available from: Sales and Circulation Section, Dept. of Public Information, United Nations, New York, U.S.A.

In Canada: The Ryerson Press, 299 Queen St. West, Toronto; and Periodica Inc., 5112 Ave. Papineau, Montreal, 34.

Review of International Commodity Problems, 1953. 1954. pp. vii + 94.

This *Review of International Commodity Problems* was prepared by the Interim Co-ordinating Committee for International Commodity Arrangements. Its four chapters deal with: *Summary of Developments in Commodity Markets in 1953*; *Summary of Inter-Governmental Action on Commodity Problems in 1953*; *Negotiation of Commodity Agreements*; and *Considerations of General Policy*. It also includes four Appendices on: *Survey of Current Situation in Certain Commodities*; *International Wheat Agreement, 1953*; *International Sugar Agreement, 1953*; and *International Tin Agreement, 1953*.

The Review states that the general trend in commodity prices in 1953 was downward, as a result of increased supplies of a number of primary commodities and a decline in demand, caused mainly by the ending of the Korean conflict. The "reduction in demand" was accompanied by "a rise in the level of commercial stocks of commodities in a number of countries. In the case of wheat, for example, in the year ending 31 July 1953, stocks held by the four major exporting countries (United States, Canada, Argentina, Australia) increased over 100 per cent and reached a level higher than ever before in the history of these countries".

World Economic Report, 1952-53. 1954. pp. viii + 156.

The sixth in a series of reviews of world economic conditions published by the United Nations. The *Introduction* includes a review of economic problems in *The Period of Reconstruction and Recovery, 1945 to 1950*; *The Period of Korean Hostilities, 1950 to 1953*; and *Current Tendencies*. Part I studies *Major National Economic Changes in Economically Developed Private Enterprise Economies*; *Centrally Planned Economies*; and *Selected Countries of Latin America and the Far East*. Part II supplies an analysis of changes in *International Trade and Payments* under the following headings: *Major Developments in World Trade, 1950 to 1953*; *International Trade and Payments of the United States, Western Europe and Japan*; *International Trade and Payments of Primary Producing Countries*; and *International Trade of Eastern Europe and Mainland China*.

Economic Survey of Europe in 1953, Including a Study of Economic Development in Southern Europe. Prepared by the Research and Planning Division, Economic Commission for Europe. Geneva, 1954. pp. xii and 314.

A comprehensive survey divided into three main parts: *Western Europe*; *The Soviet Union and Eastern Europe*; and *Economic Development in Southern Europe*. Part III includes detailed discussions of *Economic Trends and Policies in Individual Countries*; *Achievements and Potentialities in Main Branches of Production*; and, *Some Key Problems of Economic Development in Southern Europe*.

Economic Survey of Latin America, 1953. Prepared by the Secretariat of the Economic Commission for Latin America. Dept. of Economic Affairs. 1954. pp. xvi + 246.

This fifth *Economic Survey of Latin America* is divided into two main parts: *The Gross Product, Foreign Trade and the Monetary Situation* and *The Main Branches of Production*. Part I has chapters on *Trends of Economic Growth in Latin America*; *The Balance of Payments and International Capital Movements*; *Foreign Trade*; and *The Monetary Situation*. Chapters in Part II are entitled: *Agriculture*; *Mining*; *Industry*; *Electric Power*; and *Petroleum*. The report concludes with an Appendix on *Forest Production in Latin America*.

Improvement of Agricultural Extension Services in European Countries. FAO Development Paper No. 41, Agriculture. Prepared by A. H. Maunder, Agriculture Div. March 1954. pp. v + 69.

A "description of a regional approach to the problem of strengthening and improving agricultural extension services". The report is organized in two main parts: *FAO Meeting on Agricultural Extension Services and Regional Activities Contributing to the Improvement of Extension Services.*

Co-operative Thrift, Credit and Marketing in Economically Under-Developed Countries. FAO Development Paper No. 34, Agriculture. Prepared by The Rural Welfare Branch of the Agriculture Div. Rome, Italy. July 1953. pp. iv + 63.

A paper "designed for the use of agricultural leaders in countries interested in developing co-operative organizations for thrift, credit and marketing". The *Introduction* is followed by chapters on: *Co-operative Organization for Thrift; A Thrift Campaign; Rural Thrift and Credit Societies; Urban Thrift and Credit Societies; Loans in Rural Thrift and Credit Societies; Marketing Societies; The Multi-Purpose Society and Alternatives; and Central Financing Organizations.*

Agricultural Development and Rural Reform in Denmark. Agricultural Studies, No. 22. By F. Skrubbelttrang, Agriculture Div. of FAO. April 1953. pp. vii + 320.

The material contained in this study was prepared and published in response to the general interest in the evolution of Danish agriculture and in the welfare of the rural people of Denmark, and also because of the possible applications of the Danish experience in other countries.

The material is presented under the following headings: *Introduction; Period up to 1784; Rural Reforms, 1784-1807; The Critical Years, 1807-1835; Peasant Prosperity, 1835-1866; Decisive Rural Development, 1867-1901.* I—*The General Picture; Decisive Rural Development, 1867-1901.* II—*The Crisis and the Co-operatives; Twentieth Century Trends; and Postscript: Progress in Retrospect.*

Disposal of Agricultural Surpluses. Commodity Policy Studies No. 5. June 1954. pp. 34.

A study prepared by Dr. Gerda Blau, Chief of the FAO Commodities Branch. This study was to serve as background information for an inter-governmental working party on surplus disposal established by the Committee on Commodity Problems.

The Study is divided into four parts: *Findings and Recommendations of the Seventh Session of the FAO Conference; The Meaning of "Surplus"; Methods of Surplus Disposal; and Some Notes on Principles and Safeguards.* Part III is the major part of the study and presents a detailed analysis of possible methods of surplus disposal. This analysis serves as a basis for suggestions for a new code of principles concerning surplus disposal transactions.

Economic Bulletin for Europe. First Quarter, 1954. Prepared by the Research and Planning Division, Economic Commission for Europe. Vol. 6, No. 2. July 1954. pp. 108.

The July issue of the *Economic Bulletin* contains a *Review of the Economic Situation in Europe during the First Quarter of 1954*, a *Special Article on Developments in Trade between Eastern and Western Europe in 1953* and *Supplementary Statistics on the European economy.*

The Review deals with *Industrial Production in Western Europe; The Impact of World Economic Events; Trade of Western Europe; Internal Policies in Western Europe; and Developments in the Soviet Union and Eastern Europe.* The *Special Article* discusses *The Recent Increase in East-West Trade; Eastern European Exports; Western European Exports; and Current Prospects and Problems.*

THE ECONOMIC ANNALIST

A BIMONTHLY REVIEW OF AGRICULTURAL BUSINESS

G. P. BOUCHER, Editor

DECEMBER 1954

Vol. XXIV, No. 6

CONTENTS

	Page
The Economic Situation.....	123
Business Analysis of 70 Selected Farms in the Eastern Townships, Quebec, 1951-52..... <i>L. R. Fortier and P. G. Muller</i>	126
Seasonal Variation in the Egg Supply Pattern..... <i>G. B. Murray</i>	132
Brief Notes on Trends in Farm Tenancy in Ontario..... <i>D. J. Packman</i>	134
The Farmers' Point of View on Hog Production..... <i>Helen C. Abell and F. Uhler</i>	137
FAO Council Meets..... <i>S. C. Hudson</i>	140
Publications of the Economics Division.....	141
United Nations Publications.....	142
Other Publications.....	144

MARKETING SERVICE, ECONOMICS DIVISION

J. F. BOOTH, Chief

Published by Authority of the Right Honourable James G. Gardiner
Minister of Agriculture

ANNUAL AND MONTHLY INDEX NUMBERS

WHOLESALE PRICES, FARM PRICES AND LIVING COST INDEXES

Year	Wholesale Prices 1935-1939=100				Farm Prices of Agricultural Products 1935-39 = 100 (e)	Commodities and Services used by Farmers 1935-39=100		Cost of Living 1935-39=100		Consumer Price Index (1949 = 100) (j)
	(a) General Wholesale Index	(b) Farm Products	(c) Field Products	(d) Animal Products		(f) Equipment and Materials	(g) Eleven Factor Index	(h) Farm Living Costs	(i) Urban Living Costs	
1913.....	83.4					85.4		80.1	79.1	49.2
1914.....	85.4					90.2	85.3	82.3	79.7	49.6
1915.....	91.8					96.9	91.6	86.5	80.7	50.3
1916.....	109.8					101.7	100.5	93.7	87.0	54.2
1917.....	148.9					140.7	140.5	111.5	102.4	63.7
1918.....	166.0					164.1	160.2	131.1	115.6	72.0
1919.....	174.7					169.1	167.9	143.0	126.5	78.8
1920.....	203.2					190.1	186.5	171.3	145.4	90.5
1921.....	143.4					147.4	152.5	139.9	129.9	80.9
1922.....	126.8					124.6	134.1	127.9	120.4	74.9
1923.....	127.7					118.3	130.6	128.3	120.7	75.2
1924.....	129.5					122.3	131.9	125.5	118.8	74.0
1925.....	133.8					123.2	131.8	123.9	119.8	74.6
1926.....	130.3	144.4	158.5	130.2		119.9	130.6	121.1	121.8	75.9
1927.....	127.3	138.6	149.4	127.8		119.9	131.2	119.8	119.9	74.6
1928.....	125.6	136.3	134.3	138.2		118.3	129.3	118.5	120.5	75.0
1929.....	124.6	140.8	137.2	144.4		117.6	127.9	117.3	121.7	75.8
1930.....	112.9	119.5	105.8	133.3		105.6	117.0	113.7	120.8	75.3
1931.....	94.0	78.9	65.0	92.7		92.2	100.9	103.9	100.1	67.9
1932.....	86.9	65.5	60.4	70.5		89.3	93.3	97.8	99.0	61.7
1933.....	87.4	69.3	69.3	69.2		88.8	89.8	95.8	94.4	58.8
1934.....	93.4	83.5	80.5	86.5		96.8	95.5	97.9	95.6	59.6
1935.....	94.4	89.2	84.4	94.1	88.0	95.6	95.4	97.9	96.2	59.9
1936.....	96.7	97.9	102.2	93.7	96.9	98.7	98.1	98.3	98.1	61.1
1937.....	107.8	117.4	128.9	106.0	119.7	108.4	105.3	102.9	101.2	63.0
1938.....	102.0	102.9	100.9	104.8	105.0	101.2	101.7	101.9	102.2	63.7
1939.....	99.2	92.6	83.7	101.5	91.8	95.7	99.3	99.5	101.5	63.2
1940.....	108.0	96.1	85.4	106.7	96.8	101.8	106.8	108.5	105.6	65.7
1941.....	116.4	106.6	88.9	124.4	110.2	107.8	116.1	114.1	111.7	69.6
1942.....	123.0	127.1	109.7	144.6	133.1	119.2	131.6	119.0	117.0	72.9
1943.....	127.9	145.4	129.0	161.8	157.8	122.4	143.4	121.7	118.4	74.2
1944.....	130.6	155.3	144.5	166.1	172.4	126.0	148.0	122.8	118.9	74.6
1945.....	132.1	166.4	162.5	170.2	185.7	125.9	152.1	123.2	119.5	75.0
1946.....	138.9	179.5	177.9	181.2	204.1	128.0	157.0	127.1	123.6	77.5
1947.....	163.3	192.2	184.1	200.2	215.8	139.5	170.4	138.3	135.5	84.8
1948.....	193.4	232.1	200.6	263.7	255.8	173.1	197.4	162.8	155.0	97.0
1949.....	198.3	228.7	191.9	265.4	255.4	180.3	204.1	173.2	160.8	100.0
1950.....	211.2	236.7	191.9	281.4	260.8	189.9	210.4	177.6	166.5	102.9
1951.....	240.2	268.6	200.4	336.9	296.8	206.0	230.0	198.6	184.5	113.7
1952.....	226.0	250.2	223.0	277.5	274.4	215.8	243.1	210.0	187.5	116.5
1953.....	220.7	220.9	178.1	263.8	249.4	207.4	239.8	203.6	.....	115.5
1953										
Nov.....	218.7	208.4	158.7	258.0	229.2	.....	.....	.....	.....	116.2
Dec.....	219.0	210.2	158.9	261.6	229.7	.....	.....	.....	.....	115.8
1954										
Jan.....	219.8	212.9	159.4	266.3	233.2	204.0	231.1	204.8	.....	115.7
Feb.....	219.0	212.3	160.0	264.7	234.0	.....	.....	.....	.....	115.7
Mar.....	218.6	210.2	158.3	262.0	233.0	.....	.....	.....	.....	115.5
Apr.....	217.9	209.0	157.6	260.4	231.3	204.1	238.0	204.2	.....	115.6
May.....	218.2	213.1	158.2	268.0	233.3	.....	.....	.....	.....	115.5
June.....	217.8	213.1	158.9	267.3	234.9	.....	.....	.....	.....	116.1
July.....	217.4	217.8	173.6	262.1	234.5	.....	.....	.....	.....	116.2
August.....	215.8	207.9	167.6	248.2	231.3	201.9	233.7	204.5	.....	117.0
Sept.....	215.3	204.1	162.6	245.5	227.5	.....	.....	.....	.....	116.8
Oct.....	214.3	201.1	161.8	240.5	220.2	.....	.....	.....	.....	116.8
Nov.....	214.8	203.8	164.0	243.6	.....	.....	.....	.....	.....	116.8

(a) Canada. Dominion Bureau of Statistics, Labour and Prices Division. *Prices and Price Indexes*. (Mimeo.) Ottawa, Monthly.

(b) Ibid. (a). Wholesale prices of products of Canadian farms.

(c) Ibid. (a). Wholesale prices of grains, hay, tobacco and potatoes.

(d) Ibid. (a). Wholesale prices of animals and animal products.

(e) Canada. Dominion Bureau of Statistics, Agriculture Division. *Index Numbers of Farm Prices of Agricultural Products*. (Mimeo.) Ottawa, Monthly.

(f) Canada. Dominion Bureau of Statistics, Labour and Prices Division. *Price Index Numbers of Commodities and Services Used by Farmers*. (Mimeo.) Ottawa, Jan., Apr. and Aug. Includes prices of commodities in 3 groups including farm implements, building materials, gasoline, oil and grease, feed, fertilizer, binder twine, seed and hardware.

(g) Ibid. (f). Includes the 8 commodities indicated above plus tax rates, interest rates and farm wage rates.

(h) *Price Index Numbers of Commodities and Services used by Farmers*. Includes food, clothing, fuel, household equipment, health, maintenance and miscellaneous.

(i) *Prices and Price Indexes*. Includes food, rent, fuel and lighting, clothing, home furnishings and services, miscellaneous and retail prices of commodities.

(j) Canada. Dominion Bureau of Statistics, Labour and Prices Division. *Price Movements*. (Mimeo.) Ottawa, Monthly.

THE ECONOMIC SITUATION, 1954

Year-End Review.¹—Nineteen fifty-four was a year of economic adjustments and stabilization following a period of post-war backlogs, generally strong foreign markets, and steady economic expansion. In contrast to the previous year and a half there was a much greater variation in the relative strength of demand forces in 1954. Government expenditure, usually an expansionary or sustaining influence in the economy, was a little lower this year as a result of smaller defence outlays. Both the value and the volume of merchandise exports were lower than in 1953. Smaller wheat shipments were primarily responsible for this decline and were accompanied by an increasing competition in manufactured goods in overseas markets and the downturn in business conditions in the United States. Investment expenditures have been maintained, with greater strength in construction and rather less in machinery and equipment; consumer expenditures provided the major support to the economy during 1954. However, the pattern of consumer expenditures has changed considerably from that of the last two years. The demand for consumer durables has been slower but this decline has been more than offset by higher expenditures on non-durable goods and services.

The level of Gross National Product has been slightly below that of 1953. During the second quarter of 1954 it was estimated at an annual rate of \$23.9 billion compared with \$24.3 billion for the year 1953.

Income.—Total labour income has steadily increased; it was about two per cent higher in the first semester of 1954 than in the first one of 1953. This increase was entirely the result of gains in the service groups; there was a slight drop in both construction and manufacturing. The continuous rise in labour income is attributable to higher average hourly earnings.

Because of a substantially reduced grain crop net agricultural income will be lower than in 1953. Agricultural prices have steadied but are still below the level for the previous year.

Higher labour income and increased transfer payments should offset declines in other forms of personal income and, thus, total personal income should show little change from 1953.

Investment.—Capital investment has continued to be a strong support to the economy but there has been a considerable change in the composition of the investment program. The increase in new construction is expected to be six per cent higher but machinery and equipment expenditures are expected to be lower for the first time since the end of the war. The largest increases in investment will probably occur in the service sector, particularly in wholesale and retail trade, commercial office buildings and institutional services. The largest increase in investment in housing occurred last year, and this type of investment is estimated to be a little higher this year.

The most significant declines occurred in agriculture and fishing, and manufacturing.

Exports.—Merchandise exports in the first seven months of 1954 were nine per cent lower than in the corresponding period of 1953; prices were about two per cent and volume seven per cent, lower. The drop in wheat shipments from \$343 million to \$199 million accounted for most of the decline, together with reduced exports of motor vehicles and non-agricultural machinery. On the other hand, exports of newsprint and other wood products remained firm and the demand for non-ferrous metals strengthened during the year.

The greatest decline occurred in a wide range of exports to the United States. Lower exports of wheat were primarily responsible for the reduction in the total of Canada's exports to the United Kingdom from \$395 million in the January-July period of 1953 to \$343 million in the corresponding period of 1954.

Imports.—The value of merchandise imports dropped seven per cent in the first semester of 1954, compared with the first semester of 1953. The \$166 million decline was due primarily to a decrease in imports from the United States. Although this reduction in imports was partly the result of the lower level of industrial activity in 1954 it reflected to a great extent the program of liquidation of business inventories which began in 1953. Reduced replacement demand and a lower agricultural income lessened the

¹ Based on a review of the domestic situation prepared by the Domestic Situation Committee of the 1954 Federal-Provincial Agricultural Conference.

demand for and the importation of agricultural implements, and reduced consumer purchases resulted in fewer imports of textiles and automobiles.

The deficit in merchandise accounts with all countries in the first seven months of 1954 was \$195 million, slightly below the deficit for the same period in 1953. Canada's balance of trade deficit with the United States was reduced from \$537 million to \$411 million but the surplus with the United Kingdom declined from \$130 million to \$106 million. Canada's trade position remained favorable with all other countries, although the surplus was not so large as in 1953.

Consumer Expenditure.—Consumer demand for goods and services has generally remained firm, increasing about three per cent above 1953 levels and providing the main support to the economy in 1954. However, a significant shift occurred in the pattern of consumer purchasing. In contrast to 1953 the greatest strength was in the perishable goods and services sectors and there was a considerable decline in sales of durable goods, accompanied by a fairly large reduction in consumer credit.

Employment.—On the average the number of employed persons was slightly lower in 1954 than in 1953; there was also a slight increase in the civilian labor force and thus, an increase in unemployment. The number of persons out of work and seeking employment averaged five per cent of the civilian labor force for the first six months of 1954 compared with three per cent for the corresponding period in 1953. The increase in unemployment was spread through a wide range of industries.

Fiscal and Monetary Developments.—There were no major changes in federal expenditure and taxation policies in the budget for 1954-1955. After providing for tax reductions (mainly in excise taxes) of about \$36 million the budget anticipated an approximate balance between revenue and expenditure.

Monetary conditions, however, changed considerably in 1954. Monetary policy served as a restraining influence throughout most of 1953 when there was a strong demand for bank loans but in the final quarter of the year this demand eased somewhat, the Bank of Canada became a net buyer of securities, and there was some decline in bond yields. After allowance for seasonal factors, there

appears to have been little, if any, expansion in bank loans in the first three quarters of 1954. The levelling-off in the demand for bank loans was associated mainly with a cessation of the rapid rate of increase in consumer credit and inventories and somewhat greater recourse to non-bank sources of finance. In the first three quarters of 1954 the ability of the banks to supply credit exceeded the demand, the market for securities of the Government of Canada was strong, and bond yields declined substantially.

From the end of 1953 to September 30, 1954 the U.S. dollar averaged 97.47 cents and fluctuated between 98.75 and 96.34 cents in relation to the Canadian dollar.

Farm Cash Income.—Preliminary estimates indicate that during the first nine months of 1954 farm cash income from the sale of farm products amounted to about \$1.7 billion, a decline of about ten per cent compared with the \$1.9 billion estimate for the same period of 1953. Gains were recorded for returns from the sale of livestock and dairy products but were more than offset by substantially smaller returns from grains, grain participation payments, and potatoes.

Wheat accounted for more of the decline in cash income than any other single commodity; prices were lower and marketings only about 50 per cent of the very high level established for the January-September period of 1953. Increased total returns from the sale of livestock during the first nine months of 1954 were mostly due to substantial gains in income from the sale of cattle and hogs. Larger marketings more than balanced reductions in cattle prices. Farmers received much higher average prices for their hogs and increased production accounted for somewhat higher farm income from dairy products. Egg production was maintained above the 1953 level but was not sufficient to offset the lower average price which prevailed during the January-September period of 1954.

Farm Prices.—Compared with a year earlier, prices in August 1954 were higher for potatoes, relatively unchanged for dairy products and lower for grains such as rye and flaxseed, livestock and poultry and eggs. The farm price index for August 1954 was estimated at 231.0 (1935-39=100) compared with 239.9 for August 1953; these index numbers require further adjustments as they include only initial prices for grain.

Prices of Commodities and Services Used by Farmers.—The over-all price index numbers of commodities and services used by farmers continued to decline during 1954. Farm family living costs advanced but were more than offset by reductions in farm wage rates and prices paid for equipment and materials used in farm production.

Current Developments

Prices.—The consumer price index remained unchanged at 116·8 between September 1 and October 1. Among group indexes, food remained the same at 113·8 and a decrease in the clothing index was counterbalanced by slight increases in the indexes for shelter, household operation, and other commodities and services.

The general wholesale price index receded from 215·8 in August to 215·3 in September, mainly as a result of a decline in vegetable products; the latter index dropped to 194·2 from 197·1 in August, reflecting declines in the prices of coffee, cocoa, potatoes, onions, vegetable oils, livestock feeds, imported fresh fruits, canned fruits and dried fruits, which outweighed increases in grains, milled cereal foods and raw rubber.

In the animal products group lower prices for hogs, lambs, fresh meats, cured meats, hides, furs and leather overbalanced strength in the prices of fishery products, eggs, lard, tallow and butter; the index for that group dropped from 229·7 to 228·9.

Employment. — According to the monthly joint statement issued by the Department of Labour and the Dominion Bureau of Statistics employment was maintained in Canada during September but there were indications that the usual seasonal peak in labour demand had been reached during the month; this annual peak occurred somewhat later than last year. September was characterized by a high level of fall construction activity and a larger increase in logging employment than is usually reported for the month.

Coincident with the seasonal easing in labor demand was the withdrawal from the labor force of students and other short-term workers. The extent of this withdrawal and of the decline in the number of jobs available was less pronounced than in September 1953. The number of people leaving the labor force during the month ending September 18

was smaller than the decline in the number of jobs available; as a result the level of unemployment was lower than in August. This development also reflected an improvement in local labor markets.

The monthly labor force survey of the Dominion Bureau of Statistics placed Canada's civilian labor force at 5,483,000 for the week of September 18, compared with 5,569,000 a month earlier and 5,398,000 a year earlier. Persons with jobs but not at work totalled 152,000, compared with 329,000 in August and 139,000 in September 1953.

Wheat Supplies.—Supplies of wheat remaining on or about September 1 in the four major wheat exporting countries for export and carryover at the end of their respective crop years amounted to 2,148·4 million bushels compared with 2,036·5 million bushels a year earlier. Estimated supplies in each of the four countries on September 1, in millions of bushels (figures for 1953 in parentheses), were as follows: United States, 1,167 (1,067·8); Canada, 792·8 (820·1); Australia, 115·7 (56·6); and Argentina, 72·9 (92).

The 1954 Canadian crop, estimated at 377·9 million bushels on the basis of conditions at September 1 is used in these calculations. However, because of adverse harvesting conditions, a further substantial reduction may be anticipated in the size of the current Canadian wheat crop.

Total exports of wheat and flour in terms of wheat from these four countries in August amounted to 54·2 million bushels, compared with 64·1 million in August 1953. Exports from Canada declined from 28·7 million to 19·2 million bushels and those from the United States from 20·5 million to 18·7 million bushels. Exports from Argentina rose from 9·9 million to 10·7 million bushels and those from Australia from 5 million to 5·6 million bushels.

Milk.—Milk production is reaching high seasonal levels. The September output totalled about 1,598 million pounds, five per cent more than in September 1953. Production in August amounted to 1,773·5 million pounds compared with 1,720·5 million pounds in August 1953. The cumulative total for the January-August period was 11,691·5 million pounds in 1953 and 11,383 million in 1954.

BUSINESS ANALYSIS OF 70 SELECTED FARMS IN THE EASTERN TOWNSHIPS, QUEBEC, 1951-52

L. R. FORTIER AND P. G. MULLER

This article presents some of the findings drawn from a study of cropping systems conducted in 1951 and 1952 by the Rural Economics Branch of the Quebec Department of Agriculture and the Economics Division of the Canada Department of Agriculture. It deals specifically with the organization and management of 70 farms located in the counties of Arthabaska, Compton, Megantic, Richmond, Shefford, Sherbrooke and Stanstead. For purposes of analysis the farms were classified as whole milk, condensery, and creamery farms according to the type of market outlet for milk.

Land Use.—The 70 farms included in the study averaged 240 arpents per farm and ranged from 90 to 696 arpents in size (Table 1). This average is well above the average for all farms, 147 arpents,¹ in the Province of Quebec. On the average, whole milk farms had 86.2 arpents in crops per farm and condensery and creamery farms 79.1 and 74.9 arpents respectively.

The total pasture (woods pastured excluded) averaged only 46.5 arpents per farm for the whole milk farms, compared with 58.6 for the creamery and 73.3 for the condensery farms. On the whole milk farms, however, an attempt was made to compensate for the small acreage in pasture by the adoption of practices that lead to an improvement in the yield and quality of the pasture. Every year part of the long-term tillable pasture is plowed and cultivated and then re-seeded; the grass seed mixture used with the grain nurse-crop usually includes two pounds of ladino clover for each eight pounds of timothy or one and one-half pounds of ladino with ten pounds of the regular hay seed mixtures. The grain crop sown for the establishment of this ladino pasture is either harvested for grain or grazed during the months of July and August. In this article the pasturing of this crop is referred to as annual pasture to distinguish

Table 1.—Land Use on 70 Selected Farms, Eastern Townships, Quebec, 1951-1952

	17 Whole Milk Farms	22 Condensery Farms	31 Creamery Farms	All Farms
— average number of arpents * —				
Cropland:				
Mixed grain.....	12.4	12.0	12.3	12.2
Oats.....	7.7	13.6	5.6	8.6
Hay.....	47.3	43.1	48.2	46.4
Grain hay.....	0.5	0.8	0.3	0.5
Fodder corn.....	—	0.1	0.3	0.2
Corn silage.....	4.9	5.0	2.6	3.9
Grass silage.....	13.2	2.8	3.0	5.4
Grain silage.....	—	0.9	0.6	0.6
Rutabaga.....	—	0.1	0.4	0.2
Other crops.....	0.2	0.7	1.6	1.0
Total cropland.....	86.2	79.1	74.9	79.0
Rotation pasture.....	4.0	9.6	6.8	7.0
Short term pasture.....	10.3	3.0	1.2	4.0
Annual pasture.....	5.2	1.4	2.0	2.6
Long term tillable pasture.....	15.3	34.4	28.2	27.0
Permanent non-tillable pasture.....	11.7	24.9	20.4	19.7
Woods pastured.....	53.6	28.0	27.7	34.1
Woods not pastured.....	49.4	31.8	77.1	56.1
House, yard, waste.....	21.2	4.9	8.3	10.5
Total.....	256.9	217.1	246.6	240.0

* One arpent equals 0.85 acre.

¹ Census of Canada, 1951.

Table 2.—Livestock on 70 Selected Farms, Eastern Townships, Quebec, 1951-1952

	17 Whole Milk Farms	22 Condensery Farms	31 Creamery Farms	All Farms
	— average number —			
Cows.....	23	18	22	20
Other dairy cattle.....	21	19	19	19
Horses.....	2	2	2	2
Sheep and lambs.....	2	1	3	2
Swine.....	11	53	41	39
Poultry.....	155	191	141	167

it from the rotation pasture, used for only one year after three years of hay. The different patterns of crop distribution in the three groups of farms are illustrated in Table 1.

On whole milk farms emphasis was placed on silage; 20 per cent of the crop area was in grass and corn silage, 55 per cent in hay and 23 per cent in grain. On condensery farms oats and mixed grain accounted for 32 per cent of the crop area, silage for ten per cent and hay for 55 per cent. On creamery farms the area in silage represented only seven per cent of the total, and the area in hay and grain, 64 and 24 per cent respectively.

Crop Yields.—The 1951 growing season was most favourable for crop production in the Eastern Townships and yields were generally above those of the preceding years.

Yields of mixed grain ranged from 19 to 70 bushels and averaged 39 bushels per arpent. Oats ranged from 17 to 57 bushels and averaged 40 bushels per arpent. Hay yielded 1.6 tons per arpent, on the average, but ranged from a low of 0.6 to a high of 3.1 tons per arpent.

Grass silage yielded an average of 5.6 tons and corn silage an average of 7.5 tons per arpent.

Livestock.—All three groups of farms had enterprises other than the dairy business. The condensery and creamery farms, however, had much larger hog enterprises than the whole milk farms (Table 2).

Pure-bred cows represented 40 per cent of the total number. The average number of cows on whole milk farms was 23 and ranged from 13 to 37; 55 per cent of these were pure-bred. Condensery farms had an average of 18, and creamery farms an average of 22 cows. One-third of the cows in these two groups were pure-bred.

Hog numbers varied widely among the three groups of farms; they averaged about 53 per farm for the creamery farms, 41 for the condensery and only 11 for the whole milk farms. The poultry enterprise was about equally important on the whole milk and on the creamery farms and a little larger on the condensery farms.

Table 3.—Percentage Distribution of Inventory on 70 Selected Farms, Eastern Townships, Quebec, 1951-1952

	17 Whole Milk Farms	22 Condensery Farms	31 Creamery Farms	All Farms
	— per cent —			
Real estate.....	42	46	42	43
Livestock.....	39	34	36	36
Equipment.....	18	18	20	19
Feed and supplies.....	1	2	2	2
Total.....	100	100	100	100

Family Labour.—Most of the work on these farms was done by the operator and his family. The family supplied 83 per cent and hired seasonal help or the remainder of the farm labour.

Capital Investment.—Total investment averaged \$24,356 per farm or \$101 per arpent. Creamery farms had an average investment of \$20,896 per farm, condensery farms \$23,740 and whole milk farms an average of \$31,463 per farm. This investment represented \$96 per arpent for creamery farms, \$109 per arpent for condensery farms, and \$122 per arpent for whole milk farms.

The investment in land and buildings alone averaged \$36 per arpent for the creamery farms and \$50 for the condensery and whole milk farms.

As indicated in Table 3 the distribution of the total investment did not vary much among the three groups.

Farm Receipts.—The two principal sources of income were dairy products and livestock and these were of almost equal importance. Sales of grain were relatively unimportant; additional income was obtained from maple products, lumber, and custom work.

Cash receipts averaged \$7,963 per farm (Table 4). The whole milk farms had the highest cash receipts; these averaged \$10,312 per farm and were 34 per cent higher than on the condensery and 50 per cent higher than on the creamery farms.

Table 4.—Average Cash Receipts on 70 Selected Farms, Eastern Townships, Quebec, 1951-1952

—	17 Whole Milk Farms	22 Condensery Farms	31 Creamery Farms	All Farms
	— dollars —			
Crop sales.....	25	358	138	179
Livestock sales.....	3,031	3,294	3,526	3,333
Livestock product sales.....	6,736	3,331	2,435	3,761
Miscellaneous farm receipts.....	520	687	787	690
Total cash receipts.....	10,312	7,670	6,886	7,963

Sales of livestock averaged \$3,333 per farm. Sales by the whole milk farms consisted mostly of dairy cattle and sales by the two other groups included dairy cattle and hogs.

On fluid milk farms sales of livestock products—mostly milk—averaged \$6,736 per farm; a rather large quantity of milk was sold at good prices. On condensery farms sales of livestock products averaged \$3,331 and sales of livestock \$3,294 per farm. Livestock product sales on creamery farms averaged only \$2,435 per farm; sales of livestock were the main source of income and averaged \$3,526 per farm.

Expenses.—Farming operations entailed heavy expenses; these averaged \$4,681 per farm and ranged from \$4,341 on creamery farms to \$5,602 on whole milk farms.

The largest item, for all groups, consisted of feed purchases and made up 48 per cent of all current expenses. On whole milk farms, purchases of feed for dairy cattle represented 62 per cent of all feed expenses. On condensery and creamery farms, purchases of feed for dairy cattle represented only 33 and 22 per cent, respectively, of all feed expenses; purchases of feed for hogs, on the other hand, made up 53 and 57 per cent, respectively, of all feed expenses.

As more hired help was required on whole milk than on condensery and creamery farms, labour costs were much higher for that group of farms (Table 5). Fertilizer costs represented six per cent of average current expenses.

Table 5.—Average Distribution of Current Expenses on 70 Selected Farms, Eastern Townships, Quebec, 1951-1952

—	17 Whole Milk Farms	22 Condensery Farms	31 Creamery Farms	All Farms
	— dollars —			
Purchased feeds.....	2,002	2,336	2,290	2,234
Hired labour.....	817	200	100	305
Unpaid family labour.....	563	547	719	627
Taxes.....	143	118	102	117
Fertilizer.....	398	224	280	291
Machinery and car expenses.....	734	417	340	460
Repairs to buildings and fences.....	136	125	94	114
Other current expenses.....	809	485	416	533
Total.....	5,602	4,452	4,341	4,681

Income.—Labour income is what remains to the farmer for his work during the year after payment of all farm expenses and deduction of a charge for the use of farm capital. This income figure excludes the contributions to family living such as the garden, living in the house, and the farm products used in the home.

Table 6 illustrates the wide variations in labour income among the three groups of farms included in the study. Whole milk farms had an average labour income of \$2,533 per farm whereas condensery and creamery farms had averages of only \$1,358 and \$694 respectively. Seventeen farms had a labour income exceeding \$2,000, 21 had a labour income ranging from \$1,000 to \$2,000 and 32 had a labour income below \$1,000.

FARM MANAGEMENT FACTORS AND LABOUR INCOME

From the data recorded in this study it is possible to determine and measure some of the factors contributing to variations in labour income. An analysis of these data indicates that, on the average, the farms with the highest labour incomes had been more successful than other farms in attaining a large volume of business, had a more intensive crop and livestock production program, made a more efficient use of their labour resources, and had a larger capital investment.

Size of Business.—The total number of productive man work units¹ was used as a measure of size of business. On most farms the main contributors to size of business are the acreage in crops and the number of animal units.

Table 6.—Financial Summary, Averages for 70 Selected Farms, Eastern Townships, Quebec, 1951-1952

—	17 Whole Milk Farms	22 Condensery Farms	31 Creamery Farms	All Farms
	— dollars —			
Total farm receipts ^a	11,316	8,277	7,194	8,536
Total farm expenses.....	7,526	5,970	5,665	6,213
Farm income.....	3,790	2,307	1,529	2,323
Interest charge (4% of total investment).....	1,257	949	835	974
Labour income.....	2,533	1,358	694	1,349
Family labour income.....	3,095	1,904	1,413	1,976

^a Total farm receipts and farm expenses include inventory increase or decrease in addition to cash receipts and expenses shown in Tables 4 and 5.

¹ A productive man work unit is the average amount of work done by a man of average efficiency in a ten-hour day on crops or productive livestock.

Table 7.—Relation of Total Productive Man Work Units^a to Labour Income, 70 Selected Farms, Eastern Townships, Quebec, 1951-1952

Number of farms	Number of Productive Man Work Units ^a		Average Area in Crop	Average Number of Animal Units	Average Labour Income
	Range	Average			
			arpents	number	dollars
22	Below 450	394	59.0	30.3	831
27	450-649	538	74.7	36.7	1,177
21	Over 650	824	105.3	55.4	2,112

^a A productive man work unit is the average amount of work done by a man of average efficiency in a ten-hour day on crops or productive livestock.

The farms were sorted into three classes according to the number of productive man work units: small-size farms with less than 450 P.M.W.U.'s, medium-size farms with 450 to 649 P.M.W.U.'s and large-size farms with more than 650 P.M.W.U.'s. The wide differences in labour income were due largely to differences in size of business. On farms in the largest-size group, labour income was 79 per cent higher than on those in the medium-sized group, and 154 per cent higher than on farms in the small-size group.

Table 8.—Relation of Crop Production Index to Labour Income, 50 Selected Dairy Farms^a, Eastern Townships, Quebec, 1951-1952

Number of farms	Crop Production Index		Labour Income
	Range	Average	
			dollars
21	Below 100	79	1,111
19	100-129	113	1,486
10	Over 130	148	2,064

^a Farms on which the dairy enterprise supplies more than 60 per cent of total cash receipts.

Crop Production Index.—The crop production index makes it possible to compare the yield per arpent of all crops on a farm or group of farms with the average yield of all crops in a given area. The relationship between the crop production index and the labour income on the farms included in the study is illustrated in Table 8.

Table 9.—Relation of Milk Production per Cow to Labour Income, 50 Selected Dairy Farms, Eastern Townships, Quebec, 1951-1952

Number of Farms	Milk Production per Cow		Labour Income
	Range	Average	
	— pounds —		dollars
15	Below 5,000	4,096	281
24	5,000-6,999	5,684	1,778
11	Over 7,000	8,231	2,301

Milk Production.—The importance of the dairy enterprise on these 50 dairy farms is emphasized by the fact that 50 per cent of the total cash receipts was derived from the sale of dairy products and 20 per cent from the sale of dairy cattle.

There was a marked relationship between average production of milk per cow and average labour income per farm (Table 9). As production per cow increased so did labour income per farm. For the group of 15 farms with an

Table 10.—Relation of Productive Man Work Units per Man to Labour Income; 70 Selected Farms, Eastern Townships, Quebec, 1951-1952

Number of Farms	Productive Man Work Units per Man		Labour Income
	Range	Average	
			dollars
19	Below 225	192	1,066
31	225-324	273	1,369
20	Over 325	389	1,646

average of a little over 4,000 pounds per cow per year labour income averaged only \$281 per farm. On the other hand, the 11 farms with an average of 8,231 pounds per cow had an average labour income of \$2,301 per farm.

Labour Efficiency.—Good management and organization and skillful planning of operations lead to efficiency in the use of labour resources and increased earnings.

Efficiency is usually related to the size of farm, the larger farm providing greater opportunities for the efficient use of labour. In Table 10 the effect of size was eliminated by relating labour income to an index of productive man work units per man. Thus, the range in average labour income from \$1,066 for the 19 farms with less than 225 P.M.W.U.'s per man to \$1,646 for the 20 farms with more than 325 P.M.W.U.'s per man reflects the results of better management and organization and of greater skill in planning operations.

A large investment is required to equip and operate a modern farm. And, a larger labour income is generally expected from a farm with a large investment than from one of a similar type but with a smaller investment. The 70 dairy farms studied in the Eastern Townships confirmed this expectation (Table 11). The 16 farms with a capital investment exceeding \$30,000 per farm had annual labour incomes a little over twice as large as those with a capital investment of less than \$20,000 and 1.6 times larger than those with an investment ranging from \$20,000 to \$30,000.

Conclusion.—This brief analysis of some of the data relating to the 70 dairy farms studied in the Eastern Townships of Quebec stresses the importance of size of business, rate of production and efficiency in production as factors affecting the size of the annual earnings on a farm.

Table 11.—Relation of Total Capital Investment to Labour Income, 70 Selected Farms, Eastern Townships, Quebec, 1951-1952

Number of Farms	Total Capital Invested		Labour Income
	Range	Average	
		dollars	
26	Below 20,000	15,721	962
28	20,000-30,000	24,753	1,286
16	Over 30,000	37,696	2,088

Farming is the same as many other types of business; in years of normal returns the farmer with the largest volume of business is likely to have the largest returns, provided his farm is well organized and efficiently operated. Most of his costs do not increase in proportion to his size of business. A judicious choice of high return crops and livestock, and of the best production practices, and efficiency in the use of productive resources will provide him with larger returns.

SEASONAL VARIATION IN THE EGG SUPPLY PATTERN

G. B. MURRAY

The seasonal variation in the egg marketing pattern has changed in recent years. It is the purpose of this article to show what changes have occurred in this pattern—or, more specifically, in the pattern of marketing through registered egg-grading stations.

The Canada Department of Agriculture has collected statistics on egg marketings through grading stations since 1943. Between 1943 and 1953 marketings have varied from 4.7 million to 6.5 million cases of 30 dozen eggs per year. The high of 6.5 million cases was reached in 1947 when the Special Products Board was purchasing eggs for delivery to the British Ministry of Food. The low of 4.7 million cases was recorded in 1951—the second year after egg contracts with the United Kingdom had terminated. Commercial marketings in 1952 and 1953 totalled slightly more than five million cases per year.

There was no marked change in the national egg marketing pattern from 1943 to 1947, the period during which prices were controlled in Canada. In this period average marketings reached a seasonal high in April and a low in October. April marketings were about 55 per cent larger, and October marketings about 50 per cent smaller, than the average monthly marketings.

It was not until after prices were decontrolled in 1947 that the national egg-marketing pattern began to change. In the five-year period 1948-52 the range of the seasonal variation decreased to about half of that in the previous five-year period 1943-47. In both periods marketings reached a seasonal high in April, when they exceeded the average monthly marketings by 29 per cent in the 1948-52 period compared with 55 per cent in the 1943-47 period. Marketings in the 1948-52 period reached their low point in August, being 28 per cent below the average monthly marketings; the low point in marketings for the 1943-47 period was October, when the volume was only about 50 per cent of the average monthly marketings.

Changes in the seasonal marketing pattern have not been the same in all areas of the country. In Central Canada (Ontario and Quebec) the index of seasonal variation in the period 1943-47 reached a peak in March (151) and a low in October (54) with a range of variation of 97 index points. More recently (1948-52) a high point was reached in January (131) and a low in August (67) with the range narrowed to 64 points. In brief, two major changes have occurred; first, there was a sharp reduction in the total variation, resulting in a more even flow of marketings; second, periods of high and low marketing have occurred earlier in the year.

The most spectacular change in the seasonal egg marketing pattern has taken place in the Maritime Provinces. However, since commercial egg marketings in that region constitute only five to six per cent of the Canadian total, these changes have had little influence on the national egg marketing pattern.

In the five years from 1948 to 1952 inclusive, the volume of eggs marketed through registered grading stations in the Maritimes reached a seasonal high (122) in April and a low (83) in November. The range of variation extended from 22 index points above the average monthly marketings in April to a low of 17 index points below the average in November giving a variation of 39 index points compared with the national average of 57 index points.

In the 1943-47 period, the Maritime egg marketing pattern was quite different. Marketings in April averaged 65 points above, and in November, 56 points below, the average monthly marketings—a total variation of 121 index points.

The Prairie provinces show little evidence of changes in their seasonal egg marketing pattern in the 1943-52 decade. The peak has shifted forward from April to May and the low has moved back from November to October. The over-all variation during each of the periods 1943-47 and 1948-52 has been reduced from 164 to 141 index points.

Since 1943 the index of seasonal variation of egg marketings in British Columbia has varied less than in other regions. However, there have been changes in this region in addition to the levelling-out process evident in all parts of Canada. The period of heavy marketings now occurs between September and January instead of between January and June. The over-all variation in British Columbia is 36 index points, about the same as in the Maritimes.

The rapid levelling-out of seasonal variations in Canadian egg marketings has had a direct effect on the seasonal variation of prices of A Large eggs and on the customary practices in the storage of shell eggs.

If prices in the period 1936-41, the only period prior to 1948 in which they were free, are compared with prices from 1948 to date, the variation in wholesale prices of Grade A Large eggs at Montreal is then reduced by 37

**Index of Seasonal Variation of Eggs Marketed Through Grading Stations, Canada and Regions,
Five-Year Periods 1943-47 and 1948-52**

(Average monthly marketings=100)

Month	Canada		Maritime Provinces (P.E.I., N.S. & N.B.)		Central Canada (Ont. & Que.)		Prairie Provinces (Man., Sask. & Alta.)		British Columbia	
	1943-47	1948-52	1943-47	1948-52	1943-47	1948-52	1943-47	1948-52	1943-47	1948-52
January.....	97	120	83	106	109	131	72	100	109	114
February.....	112	114	106	99	122	124	87	97	116	99
March.....	142	111	156	107	151	119	124	113	131	99
April.....	155	129	165	122	141	117	195	169	111	102
May.....	140	128	157	121	129	108	187	185	107	99
June.....	133	100	137	99	126	85	171	142	104	86
July.....	87	79	88	86	75	69	111	99	81	78
August.....	71	72	71	88	62	67	80	71	79	88
September.....	72	75	77	102	70	76	61	55	99	105
October.....	53	75	57	93	54	82	37	44	82	106
November.....	60	89	44	83	69	101	31	52	87	110
December.....	78	108	56	94	92	121	44	73	94	114

per cent. In the years immediately preceding World War II, prices ordinarily reached a high in November and a low in April. The November price was 44 per cent above the monthly average price whereas the April price was 24 per cent below it. Since 1948 the seasonal high, in October, was 25 per cent above the annual average price and the low, in January-February, was 16 per cent below the annual average price.

The reduction in the seasonal variation of marketings was also accompanied by a decrease in the storage of shell eggs. As more eggs become available in periods formerly characterized by seasonal light marketings, fewer storage eggs are required to supplement fresh supplies. In addition, less fluctuation in marketings and prices throughout the year decreases the profitability of an egg storage program.

Changes in the egg marketing pattern in recent years include a considerable reduction in the seasonal fluctuation of egg production and a shifting of the peaks and troughs of the production pattern. In the period 1943-47 the index of marketings varied from a high of 155 in April to a low of 50 in October; in the five years 1948-52 the peak, reached in April, was only 129

whereas the low (72) was reached in August instead of October. The extent of the seasonal variation in marketings in the second period was only about half what it had been in the earlier period. Similarly, there has been a marked reduction in the extent of the seasonal variation in prices.

The smoothing out of the marketing pattern has been made possible by the widespread adoption of better breeding, feeding and management practices. This trend will probably continue until producers find the most profitable production patterns.

BRIEF NOTES ON TRENDS IN FARM TENANCY IN ONTARIO

D. J. PACKMAN

Farm tenancy has existed in Canada in one form or another for many years. However, it is only since the enumeration of tenants in the decennial census during the latter part of the nineteenth century that its extent and the changes in its regional patterns have been fully appreciated.

According to the 1951 Census only 7.2 per cent of the farms in Canada were rented in 1951 and 14.3 per cent consisted of partly-owned and partly-rented farms, making a total of 21.5 per cent of all farms not fully owner-operated (Table 1).

Figures for Canada as a whole, however, hide some very significant differences among various farming areas. In 1951 only 4.7 per cent of the Quebec farms and 7.9 per cent of those in the Maritime Provinces and British Columbia were either fully rented or partly-owned and partly-rented, compared to 16.5 per cent of the farms in Ontario and 38.6 per cent of those in the Prairie Provinces. There is a great deal of variation even within each of these regions.

Table 1.—Percentage Distribution of Occupied Farms According to Tenure in Specific Regions of Canada, 1951

	Ontario	Quebec	Prairies	Maritimes and B.C.	Canada
	— per cent of total —				
Owner.....	81.7	94.3	60.8	89.9	77.3
Tenant.....	5.9	1.9	12.6	2.5	7.2
Part-owner and part-tenant.....	10.6	2.8	26.0	5.4	14.3
Manager.....	1.8	1.0	0.6	2.2	1.2
Total.....	100.0	100.0	100.0	100.0	100.0

These figures indicate that tenancy is concentrated in the Prairie provinces, and is much more important in Ontario, especially in its cash crop areas, than in other parts of Central and Eastern Canada.

Ontario.—In 1901 about 80 per cent of the farms in Ontario were fully owned, 14 per cent were operated by tenants and six per cent were partly-owned and partly-rented (Figure 1). Fully owner-operated farms have made up about the same proportion of the total number of farms since 1901. However, the proportion of part-owner and part-tenant farms has been increasing rather steadily since 1921 and in 1951, 10.6 per cent of all Ontario farms were in this category. Conversely, there has been a trend towards fewer tenant-operated farms. During the period from 1941 to 1950 there was a particularly rapid reduction in the proportion of tenant farms from 12.1 to 5.9 per cent of all occupied farms.

Tenancy seems to be more closely associated with intensive than with extensive types of farming. Most of the counties with the largest proportion of tenant farms are located on or close to the border of Lake Erie and a few on the border of Lake Huron. The counties of Essex, Kent, Elgin, Lambton, Middlesex, Prince Edward and Durham are counties where cash crop farms are common and such products as corn, tobacco, early vegetables, soybeans and fruits are produced in quantity. York and Victoria counties, on the other hand, are located in areas of intensive whole milk production and other types of livestock farming.

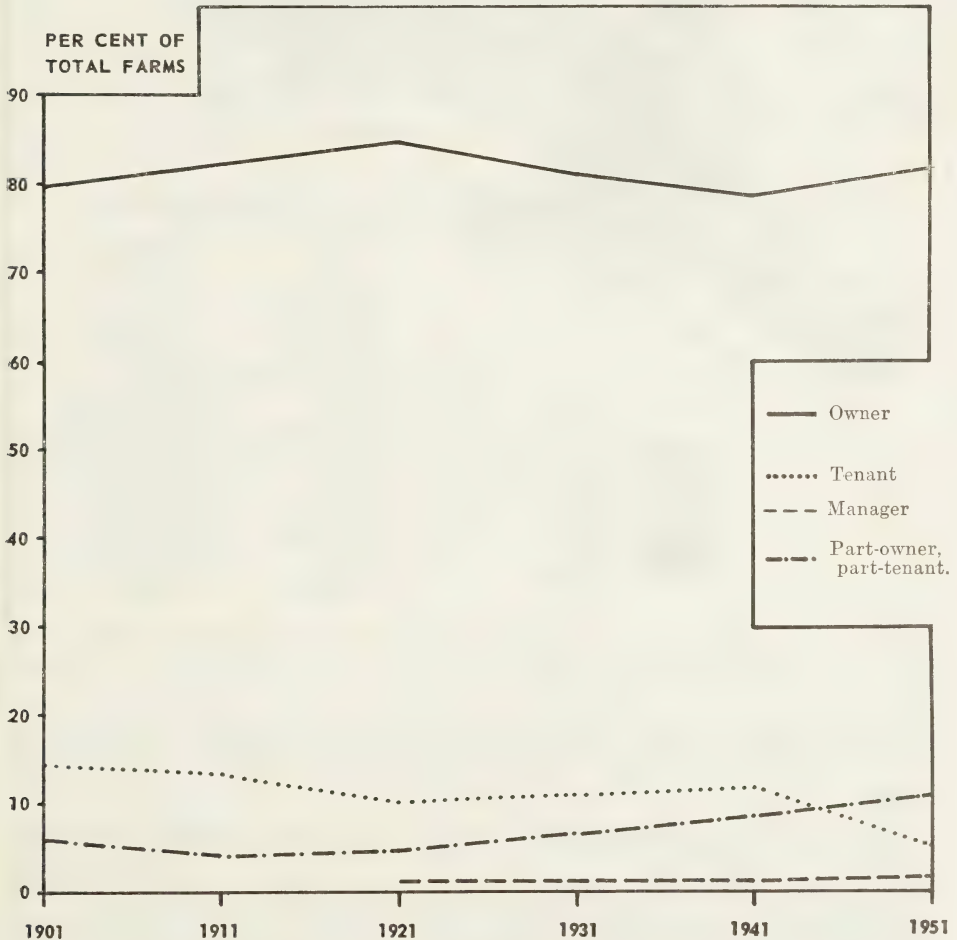


Figure 1—Percentage distribution of owner-operated, rented, partly-owned and partly-rented, and manager-operated farms, Southern Ontario, 1901-1951.

The counties which have the smallest proportion of tenancy favor a more extensive type of agriculture; they include Dufferin, Grenville, Wentworth, Halton, Grey, Wellington, Waterloo, Perth, Russell, Lanark, Renfrew and Prescott counties. In general, these counties are in areas in which a mixed type of farming predominates.

The proportion of the total area of occupied farm land operated by tenants in Ontario decreased from 8.8 per cent in 1921 to 4.8 per cent in 1951. During the same period the proportion of the total farm area operated by part-owners

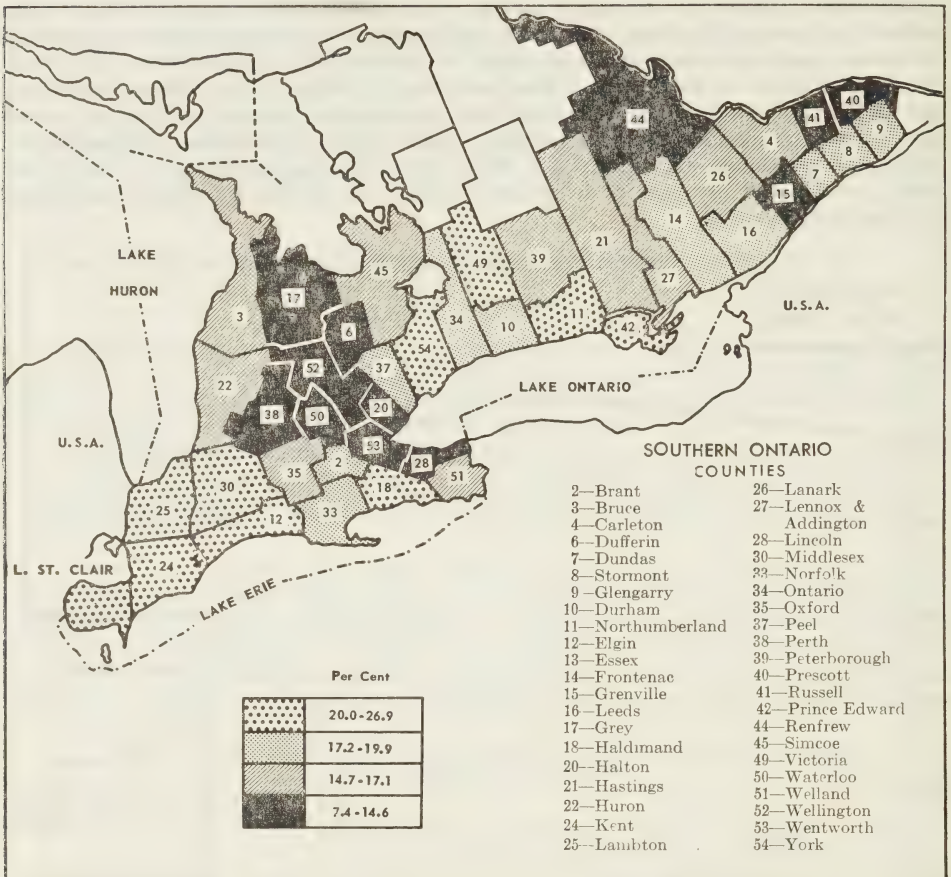


Figure 2—"Fully-rented" plus "partly-owned, partly-rented farms" as a percentage of all occupied farms, Southern Ontario, 1951.

and part-tenants increased from 6.3 to 16.0 per cent and the area occupied by owner-operators declined from 83.9 per cent in 1921 to 77.2 per cent in 1951.

In terms of total acreage, there has been a gradual increase in the percentage of occupied farm land fully operated by owners. In 1951, for example, 89.2 per cent of the total area in occupied farm land was owner-operated, compared with 85.1 per cent in 1901. Only during the period following the recession of the 1930's did the census figures show a decrease in the proportion of the occupied farm land fully operated by the owners.

CORRIGENDUM

In the October 1954 issue, on page 104, lines 2 and 3 of the last paragraph of the article on "Recent Trends in the Production and Distribution of Canadian Apples" read 0.52 bushels and 0.56 bushels for 0.52 pounds and 0.56 pounds.

THE FARMERS' POINT OF VIEW ON HOG PRODUCTION

HELEN C. ABELL and F. UHLIR

Why is it that in mixed farming areas in Canada some farmers raise hogs and others do not? Why do available statistics indicate clearly that the numbers of hogs produced in this country change and fluctuate over both short and long periods of time?

Agricultural economists have charted and explained the fluctuations in hog production. One author expressed the view that "The most important factors influencing farmers' decisions to increase or decrease hog production are: (a) the favorableness of prospective hog prices relative to feed grain prices; (b) the quantity of grain available for feeding; (c) the intensity of farmers' desires to increase their cash income".¹

Another author, in an earlier report, said that "In Western Canada the size of the hog population depends mostly on prices, grain supplies and cattle raising programs".²

Table 1.—Reasons for Highest Levels of Hog Production Given by Hog Producers in Two Mixed Farming Areas of Central Alberta, 1952.

Reasons Given	Farmers	
	Total Number	Per cent
Hogs were profitable at the time.....	324	32.3
As a way of marketing grain (during periods of low grain prices or to use grain of low quality).....	192	19.1
Necessary facilities to increase hogs were available (grain and/or pasture and/or skim milk and/or housing).....	156	15.6
Had adequate feed and hogs were profitable at the time.....	96	9.6
Had necessary labour supply (had family or hired help or personally able to care for hogs).....	42	4.2
Result of gradual build-up of livestock.....	42	4.2
In response to Government encouragement during war.....	30	3.0
"Good luck in farrowing".....	24	2.4
Increased hogs because beef or dairy cattle had been decreased.....	12	1.2
No reason given.....	84	8.4
Total.....	1,002	100.0

Economists emphasize the economic aspects but are no less aware of the influences of non-economic factors on variations in hog production. Their realization of the importance of these factors led to a socio-economic study of the factors which motivate farmers to begin, or make changes in, their hog production programs. That study, carried on during the spring of 1952, was based on answers given by farmers included in a representative sample of the farm operators in the Pine Lake and Bigstone hog producing areas of Central Alberta.

Table I presents a summary of the reasons given by these hog producers for the highest levels of production reached over the period during which they raised hogs and Table 2 presents a similar summary for the reasons given for the lowest levels. An examination of these two tables indicates that the farmers' comments generally confirm the economist's analysis of the fluctuations in hog production trends. The farmers, too, stress profit expectability and the availability of feed as factors that may determine changes in hog production from one year to another. Farmers, however, also do and must give consideration to factors, such as the availability of suitable farm labor, hog diseases,

¹ Schrader, F. M. *Factors Affecting Hog Production*. Ottawa, Canada Dept. of Agriculture, Marketing Service, Economics Div. March, 1953. p. 4.

² Woollam, G. E. "Periodic Movements in Hog Production". In *The Economic Annalist*, Vol. XXII, No. 3, June, 1952. p. 59.

Table 2.—Reasons for Lowest Levels of Hog Production Given by Hog Producers in Two Mixed Farming Areas of Central Alberta, 1952.

Reasons Given	Farmers	
	Total Number	Per Cent
Just starting in hog production.....	306	30.5
Did not have much feed available at the time.....	192	19.2
Hogs not profitable at the time.....	120	11.9
Labour problem (lack of family and/or hired help, personal illness, "hogs are too much work", "busy with other enterprise, no time for hogs").....	114	11.4
Disease killed off hogs.....	90	9.0
Lack of adequate housing and/or pens for hogs.....	24	2.4
Low number of young pigs farrowed.....	12	1.2
No reason given.....	144	14.4
Total.....	1,002	100.0

and adequate hog shelter. During the last war they were quick to respond to patriotic appeals and stepped up their hog production in order to increase food supplies.

The reasons given by the interviewed farmers for their highest and lowest levels of production could have been given by any student of changes in the farm business. What lends distinctive value to the information presented in Tables 1 and 2 is the rank or relative importance assigned to these reasons by the farmers themselves. Moreover, continuity or discontinuity in hog production and the time element are other important aspects of this farm enterprise on which the interviewed farmers made some very helpful comments.

Continuity in Hog Production.—Only four per cent of these farmers had never raised hogs; 80 per cent had raised them continuously since they first introduced the enterprise in their farm business; seven per cent had interrupted their production once or twice but were raising hogs during the year of the study; and the remaining nine per cent had previously raised hogs but were not doing so at the time they were interviewed.

Table 3.—Farmers' Reasons for Initiating Hog Production in Relation to their Continuity as Hog Producers, in Two Mixed Farming Areas of Central Alberta, 1952.

Reasons Given	Farmers Who Have Raised Hogs Continuously		Farmers Who Have Interrupted or Stopped Production		All Farmers Who Ever Raised Hogs ^a	
	number	per cent	number	per cent	number	per cent ^b
As a way of using available skim milk and/or low quality grain.....	246	25.3	24	12.1	270	23.1
As a way of marketing grain.....	204	21.0	6	3.0	210	17.9
As a part of the steady buildup of the farm business.....	168	17.3	24	12.2	192	16.4
For profit and to use available feed.....	72	7.4	—	—	72	6.2
Personal reason: "I believe in mixed farming", "everybody raises hogs", "easy to handle", "financially easy to start".....	42	4.3	—	—	42	3.6
A good source of income.....	204	21.0	66	33.3	270	23.1
Family labor available to help with hogs.....	—	—	12	6.1	12	1.0
No reason given.....	36	3.7	66	33.3	102	8.7
Total.....	972	100.0	198	100.0	1,170	100.0

^a 1,170 of the 1,212 farmers in the areas were or had been hog producers. Of the few (3.5 per cent) who never raised hogs, 0.5 per cent gave no reason for not doing so, 1.0 per cent said that hogs were not profitable, 1.0 per cent said they had not enough feed and/or housing, 0.5 per cent had no family help to care for hogs and 0.5 per cent simply said, "I am not a hog-man".

^b The differences in the proportions of continuous and non-continuous hog producers who gave their reasons for initiating hog production is statistically significant at the 0.01 level as tested by the Chi-square method.

All of these farmers were asked why they had or had never introduced the hog enterprise into their farm businesses. Their answers to this question were related to their continuity in production and are summarized in Table 3.

An examination of the information in this table shows a marked degree of similarity in many of the reasons given by the continuous and non-continuous hog producers. But, it is clearly evident that the "in-and-outers" attach more importance than the "steady" producers to hogs as a good source of income and to the availability of family labor to care for them.

The Time Element.—Not all of the farmers included in this study were hog producers when they first started farming. For purposes of analysis they were divided into three groups, according to the period during which they started farming and that during which they started hog production; these periods are the prewar, from 1902 to 1938; the war, from 1939 to 1945; and the postwar period from 1946 to 1952. The proportion of farmers who started farming and the proportion of those who had their first start in hog production during each of these three periods is as follows:

	Started Farming	Started Hog Production
Number of farmers	1,212	1,170
	<i>per cent</i>	
Prewar period	40	25
War period	29	40
Postwar period	31	35
Total	100	100

These data draw attention to the lag between the time at which some farmers started farming and that at which they started hog production. It is clearly evident that war conditions provided many farmers with an incentive to add this enterprise to their farm business.

Further analysis of the information supplied by the farmers makes it possible to determine in which of these periods farmers reached their highest and lowest levels of production. The percentage of those who reached their highest levels in the postwar period is about 2.5 times higher than the percentage of those who reached it during the war. Many farmers also reached their lowest levels during the same period; the figures presented below suggest that, in many cases, the same farmers reached both their highest and their lowest levels during this period.

The percentage distribution of the farmers according to the periods during which they reached their highest and lowest levels of production is as follows:

	Levels of Hog Production	
	Lowest	Highest
	<i>per cent of 1,212 farmers</i>	
Prewar period	15.8	0.5
War period	18.8	23.2
Postwar period	48.0	58.9
No fluctuation in production	2.5	2.5
Started hog production only in 1951 or 1952	11.4	11.4
Never raised hogs	3.5	3.5
	100.0	100.0

The reasons given for changes in production varied according to the period of production. A low level of hog production was most often attributed to "just getting started in hogs" by farmers who reached this level before or during the war. "Lack of available feed" was most often given as a reason by

those who had their lowest level during the war. Lowest hog production levels during the postwar period were generally attributed to "disease", "lack of profit", "lack of labor", "bad luck in farrowing" and "lack of adequate housing"; these reasons were given much more frequently by the "in-and-outers" than by the continuous producers.

"Profit", "available labor" and a "decrease in other livestock" were stated as the reasons for a high level of hog production more often by "in-and-outers" than by continuous hog producers, and more often by those who had their highest level of production during the war period than by farmers who reached those levels either before or after the war.

In conclusion it may be said that the economist and the sociologist, as well as the farmer, recognize the importance of feed availability and hog prices as factors determining the levels of hog production. The individual farmer also has to contend with other factors such as availability of farm labor, hog diseases, adequate housing and relative success with farrowing. These problems may usually be solved through the combined efforts of the farmer, agricultural extension workers, veterinarians and farm management specialists. The most difficult problem probably consists in estimating the probable market demand and gearing production to the satisfaction of that demand.

FAO COUNCIL MEETS

S. C. HUDSON¹

The Twenty-Fourth Session of the FAO Committee on Commodity Problems and the Twentieth Session of the Council of FAO were held in Rome, September 20 to October 8, 1954. The Committee on Commodity Problems, which has a membership of 20 countries, reviewed recent major developments in the world commodity situation. Particular interest continued to be focussed on the problem of distributing surpluses of certain agricultural commodities, most of which are held by the United States government. In this connection, the Committee received the first report of the FAO Consultative Sub-committee on Surplus Disposal which was established in Washington during the past summer to serve as a multilateral forum to review national programs for surplus disposal and complaints arising from the operation of any such program. The Committee noted the decision of the Economic and Social Council to establish a Permanent Advisory Commission on International Commodity Trade and the need for a working relationship between the Committee on Commodity Problems and that body. The Report of a Working Party on Olive Oil was considered and the Committee recommended that the Secretary-General of the United Nations be requested to call an international conference on olive oil with the objective of establishing an international commodity agreement.

In this year between biennial sessions of the full-scale Conference of the Organization, the 24-member Council of FAO had the responsibility of reporting to member governments on the world food and agriculture situation as well as receiving reports on the activities of FAO during the past year and approving the program of work and budget for 1955.

The main features of the current world food and agriculture situation noted by the Council were a continued increase in aggregate world agricultural production somewhat greater than the growth of population together with an uneven regional distribution of production as related to nutritional needs. Because of less favorable weather in many regions and acreage restrictions, especially in North America, crop production in 1954, particularly for cereals, is expected to be lower. It concluded on the basis of present indications that although difficulties with surpluses are likely to persist for some time to come

¹ Secretary of the Interdepartmental FAO Committee and Canadian representative to the FAO Council.

the period of rapid accumulation had passed and stocks might be expected to decline in the near future. It was agreed that every effort should be made to see that accumulated supplies are disposed of in an orderly manner and are used as far as possible to relieve famine and promote economic development in under-developed countries. In this connection, the Director-General was requested to ask Member Governments whether they were prepared to adhere to a statement of Principles of Surplus Disposal Recommended by FAO. It was felt that preoccupation with surpluses should not lead to any relaxation of efforts to increase agricultural production in the less-developed areas. The Council, therefore, reaffirmed the importance of expanding production on a selective basis having regard for the nutritional needs of the area and the economics of production. To this end, conferences to work out production plans were held in Latin America and the Near East during the past year and a further conference is planned to take place in the Far East in the near future.

The Council also reviewed the activities of the Organization during the past year under both the regular program and the Expanded Technical Assistance Programme. General satisfaction was expressed with the progress achieved and the program of work and budget for 1955 was approved. Various administrative, financial and constitutional matters having to do with the Organization were also dealt with by the Council.

PUBLICATIONS OF THE ECONOMICS DIVISION

Breakfast Bacon Consumer Preferences in Relation to Fat-Lean Distribution. Ottawa. June 1954. pp. 3 + 8 figs.

A study made by the Live Stock and Live Stock Products Division, the Economics Division and the Consumer Section of the Marketing Service. The purpose of the study was "to determine what looked like good breakfast or side bacon to consumers".

The findings are based on consumers' ratings of bacon displayed at the Royal Winter Fair, Toronto, in 1953 and at *Le Salon National de l'Agriculture*, Montreal, in 1954. Figures 1 to 3 illustrate the three sets of six samples of bacon displayed at the Royal Winter Fair, and the lean and fat areas and ratings of these samples; Figures 5 to 7 refer to the sets of samples displayed at *Le Salon National de l'Agriculture*. Figures 4 and 8 are bar charts describing the relationship between lean area and rating of bacon.

The Market for Farm Products in Newfoundland, 1948-1950. Shipley, W. C. Dept. of Agriculture Pub. 911. September 1954.

A study made at the request of and in co-operation with the Department of Natural Resources of Newfoundland. The first study of its type undertaken there, it was designed: "(1) to determine the market for farm products in Newfoundland including specific analyses of the markets in the St. John's and Corner Brook market areas for the two-year period April 1, 1948 to March 31, 1950.

(2) to determine what proportion of the total market requirements for the two-year period ended March 31, 1950 was produced within Newfoundland itself and what proportion was supplied from other sources.

(3) to make a comparison between the market, together with sources of origin of farm products, as it existed during the twelve months immediately preceding Newfoundland's entry into Confederation and the twelve months immediately following Confederation".

The author has divided this report into six main sections. *Nature of the Area* describes the location, population, agriculture, climate and transportation aspects of the Island of Newfoundland; *Extent of the Market* analyzes the Newfoundland market itself as a whole, and the St. John's and Corner Brook market areas, and the St. John's and Corner Brook markets in relation to the entire Newfoundland market; *Market Demand for Farm Products in Newfoundland* provides a statistical description of local, non-local and total market-

ings in 1948-49 and 1949-50; *Seasonality of Marketings* discusses monthly variations in the marketings of some local and non-local farm products during 1948-49 and 1949-50; *Practices and Opinions* describes the methods of sale followed by farmers, the main source of farm income and the distribution channels serviced by wholesalers, and summarizes opinions given by farmers, wholesalers and retailers on the marketing of farm products on the Island; and *Effect of Confederation on Market for Farm Products in Newfoundland* describes some of the benefits resulting from Newfoundland's entry into Confederation.

The report itself is supplemented by two detailed statistical appendices; one on *Market Demand for Farm Products in St. John's Market Area* and the other on *Market Demand for Farm Products in Corner Brook Market Area*.

Credit Unions in Canada, 1953. Processed bul. September 1954. pp. 19.

This report provides a concise description of Credit Union activities and developments in 1953. Its contents are grouped under the following headings: *Growth and Development*; *Lending Operations in 1953*; *Bond of Association*; *Comparative Statistics, 1945-1953*; and *Balance Sheet, 1953*.

An explanatory note on The Canadian Co-operative Credit Society appears at the end of the report. This note describes the provisions of the Act respecting *Co-operative Credit Associations*, passed by the Federal Parliament and assented to in May 1953.

Co-operation in Canada. O'Meara, J. E. Processed bul. October 1954. pp. 30.

This twenty-second annual summary of *Co-operation in Canada* reviews co-operative developments and operations in 1953. It includes information on numbers of various kinds of co-operatives, membership, volume of business, growth of marketing and purchasing co-operatives, merchandising, financial structure, insurance and other aspects of co-operation in the country.

A separate section on *Co-operative Wholesaling in Canada* is an innovation which provides the reader with a detailed analysis of co-operative wholesale activities. Particular attention is given to financial structure, volume of sales and operations in 1953 and the operations of the Interprovincial Co-operatives Limited.

UNITED NATIONS PUBLICATIONS

Available from: Sales and Circulation Section, Dept. of Public Information, United Nations, New York, U.S.A.

In Canada: The Ryerson Press, 299 Queen St. West, Toronto; and Periodica Inc., 5112 Ave. Papineau, Montreal, 34.

United Nations Sugar Conference, 1953. Summary of Proceedings. 1953. pp. v + 38.

A report which includes summary records of four plenary meetings, the resolutions of the final plenary meeting, the Final Act of the Conference and the Text of the International Sugar Agreement prepared by the Conference.

Agriculture in Asia and the Far East, Development and Outlook. September 1953. Part I, pp. 58; Part II, pp. iv + 163.

Part I is a report of the FAO regional meeting on food and agricultural programs and outlook in Asia and the Far East, held in Bangalore, State of Mysore, India, July 27-August 5, 1953. The two main chapters of the report deal with: *The Work of FAO in the Region* and present a *Review of Agricultural Development Policies*.

Part II consists of a working paper prepared by FAO for discussion at the regional meeting and revised in the light of additional information obtained at the meeting. The chapter headings of this paper are as follows: *Recent Development in the Food and Agriculture Situation*; *Agricultural Development Plans and Programs in the Region*; *Programs for the Development of Land and Water Resources*; *Programs for Crop and Livestock Improvement*; *Fisheries*

Development—Problems and Programs; Forestry Problems and Use of Forest Products, Economic Policies and Measures; and Methods of Reaching the Farmer.

Agriculture in the Near East, Development and Outlook. November 1953. Part I, pp. iv + 33; Part II, pp. iv + 78.

Part I includes the report of the third FAO regional meeting on food and agricultural programs and outlook in the Near East held in Cairo, Egypt, September 1-9, 1953. The report comprises chapters on: *Review of Developments in Food and Agriculture; Agricultural Development Programs and Policies; Measures to Implement Development Programs; Nutrition; Forestry, and Work of FAO in the Region.*

Part II presents a review of *Current Development of and Prospects for Agriculture in the Near East*. This review consists of a working paper divided into seven chapters: *Review of Recent Developments in Near East Food and Agriculture; Current Status of Food and Agricultural Planning in the Near East; Targets and Estimates for Near East Food and Agricultural Production in 1956; Development of Land and Water Resources with Special Reference to Irrigation; Farm Mechanization; Crop and Livestock Improvement; and Some Economic Measures Affecting Agricultural Expansion.*

Prospects for Agricultural Development in Latin America. 1954. pp. v + 146.

A report which stresses the dependence of Latin America on exports of primary products, mainly agricultural, for the importation of capital goods necessary for general economic development. The report is divided into nine chapters: *Appraisal of Recent Developments in Food and Agriculture; Review of Agricultural Plans and Programs in Latin America; the 1956/57 Agricultural Production Targets and Estimates; Programs for Expansion of the Cultivated Area; Programs for Crop and Livestock Improvement; Farm Mechanization; Fisheries Development; Forestry Development; and Some Economic Measures Affecting Agricultural Expansion.*

Economic Report of the President. Transmitted to the Congress, January 28, 1954. Washington, United States Government Printing Office. 1954. pp. ix and 225.

The first *Economic Report* of the President to be transmitted to the Congress since the Council of Economic Advisers was reconstituted under the chairmanship of Arthur F. Burns, formerly Professor of Economics, Columbia University, and Director of Research, National Bureau of Economic Research.

Part I of the Report is of an introductory character and deals with the *Role of Government in Economic Progress*. Part II presents an *Economic Review of 1953* and discusses such topics as: *Performance of the American Economy; Governmental Policy in a Year of Economic Change; Appraisal of the Current Economic Situation; Pathways to Strength; Reforming the Tax Structure; Governmental Aids to Housing and Finance; Agriculture in an Expanding Economy; Social Insurance and the Minimum Wage; Planning of Public Works; Economic Relations with Other Countries; and Dealing with Economic Instability.*

The State of Food and Agriculture 1954, Review and Outlook. pp. vi + 157.

This report describes the more recent developments in the food and agriculture situation and discusses the immediate outlook. In the foreword P.V. Cardon, Director-General of FAO, states that world production continued to expand during 1953-54 and that because of burdensome surpluses in some areas farm prices and incomes tended to decline in these areas. He does not envisage any essential change in this situation in 1954-55.

The report includes a *Summary*, and chapters on *World Review and Outlook; Regional Problems and Policies; and Review and Outlook by Commodities.*

The Work of FAO 1953-54, A Progress Report. July 1954. pp. 60.

In the Preface of this report P. V. Cardon stresses the fact that "The ultimate goal of all FAO's work is to enlarge human wellbeing by increasing and improving the production, distribution, and utilization of food and other products of agriculture, forestry and fisheries".

The progress report itself includes chapters on work done in agriculture, economics, fisheries, forestry, nutrition, and information and education.

Economic Bulletin for Europe, Second Quarter, 1954. Vol. 6, No. 3, October 1954. pp. 76.

The Research and Planning Division of the Economic Commission for Europe prepared this review of the economic situation in Europe which deals specifically with production, trade and payments, and prospects in Western Europe, and personal consumption and industrial production in the Soviet Union and Eastern Europe.

OTHER PUBLICATIONS

Disponibilités, Mode de Vente et Lieux d'écoulement des Produits Agricoles, 1951-52-53. Région du Bas-St-Laurent, N° 2. Québec, Division des Marchés et des Enquêtes du Service de l'Economie Rurale, Ministère de l'Agriculture de la Province de Québec. 1954. pp. iii + 186.

The third statistical report in a series of eleven on the marketing of agricultural products in the province of Quebec. It covers the Lower St-Lawrence Area (agricultural area 2) which includes the counties of Kamouraska, L'Islet, Montmagny, Rimouski, Rivière-du-Loup and Temiscouata.

The main purpose of the report is to provide information on methods of sale, an inventory of available supplies and a description of the market outlets for farm products. It describes the agricultural characteristics of each of the parishes in the area and includes statistical tables on land use, livestock numbers, poultry and poultry products, hay production, feed grains, seeds, dairy products, fruits and vegetables and other products.

Individuals' Saving: Volume and Composition. Friend, Irwin. New York, John Wiley & Sons, Inc., and London, Chapman & Hall, Limited. 1954. pp. x + 288.

This book provides an appraisal of available data on individuals' saving in the United States. The analysis of these data is used as a basis for the determination of trends in saving and a systematic exploration of the factors which affect saving.

There are two main parts in the book. Part I describes and appraises saving data published by the U.S. Securities and Exchange Commission, the Department of Commerce, and the Federal Reserve Board, as well as saving estimates obtained from sample surveys made during the postwar period, data tabulated or compiled by the financial press and long-term series developed by W. H. Lough and Simon Kuznets.

Marketing Potatoes in Ontario. Haslett, E. A. Farm Economics Branch, Ontario Dept. of Agriculture, in co-operation with Economics Division, Marketing Service, Canada Dept. of Agriculture. Toronto, Ontario Dept. of Agriculture. 1954. pp. 46.

A study designed "to trace the channels of trade; the agents and agencies involved in the distribution of potatoes; the volume and seasonality of the movement of potatoes; and to examine the nature of the competition between potatoes of various origins in Ontario".

The author has organized his report as follows: *Summary; Introduction; Marketing Late Potatoes by Producers; Marketing Essex-Kent Early Potatoes by Producers; Marketing Potatoes by Dealers in Toronto; The Wholesale Potato Trade in Toronto; Marketing Potatoes in Ottawa; Methods of Distribution in Ottawa; and Competition Between Ontario-Grown and Other Potatoes.*

THE ECONOMIC ANNALIST

A BIMONTHLY REVIEW OF AGRICULTURAL BUSINESS
MARKETING SERVICE, ECONOMICS DIVISION,
DEPARTMENT OF AGRICULTURE, OTTAWA

Published by Authority of the Right Hon. James G. Gardiner, Minister of Agriculture

INDEX, Volume XXIV, 1954

	PAGE
Apples, Recent Trends in the Production and Distribution of Canadian D. W. Ware	101
Brief Notes on Trends in Farm Tenancy in Ontario D. J. Packman	134
Business Analysis of 70 Selected Farms in the Eastern Townships, Quebec, 1951-52 L. R. Fortier and P. G. Muller	126
Cattle Ranchers in Southwestern Saskatchewan, Marketing Practices of S. R. Burkell	108
Consumers' Opinions of Side Bacon Charlotte I. Johnson	112
Crop Labour Requirements in the South—Central Red River Valley of Manitoba J. G. MacKenzie	58
Dairy Barn Chores, Labour Requirements for J. M. Fitzpatrick	62
Economic Situation, The February 3	
—April 27	
—June 51	
—August 75	
—October 99	
—December 123	
Eastern Townships, Quebec, 1951-52, Business Analysis of 70 Selected Farms in the L. R. Fortier and P. G. Muller	126
Egg Market, The Structure of the New Brunswick G. B. Murray	29
Egg Supply Pattern, Seasonal Variation in the G. B. Murray	132
FAO Conference, The 1953 S. C. Hudson	22
FAO Council Meets S. C. Hudson	140
Farmers' Point of View on Hog Production, The Helen C. Abell and F. Uhler	137
Farm Organization, Farm Practices and Prospects for Forage Production in West Central Manitoba, Some Aspects of R. C. Nicholson	90
Farm Organization, Progress and Adjustments on Land Class II in the Brown Soil Zone, Saskatchewan, 1952, Some Aspects of ..H. L. Biehn	15
Farm Size and Tenure in Relation to Grade of Land, Regina Plains and the Vibank-Windthorst Area, Saskatchewan R. A. Stutt	84
Federal Agricultural Programs Affecting Prices of Farm Products, March 1, 1953, to February 28, 1954 Marjorie R. Cameron	32
Financing Farming in Canada S. C. Hudson	53
Food Expenditure Patterns in Canada, Trends in B. A. MacDonald	78

Hog Production, the Farmers' Point of View on	<i>Helen C. Abell and F. Uhlir</i>	137
Labour Requirements for Dairy Barn Chores	<i>J. M. Fitzpatrick</i>	62
Land Use in the Peace River Area of British Columbia, 1952	<i>R. H. Campbell</i>	115
Land Utilization and Rate of Land Improvement on Lands in the Saskatchewan River Delta	<i>J. P. Hudson</i>	104
Manitoba, Crop Labour Requirements in the South-Central Red River Valley of	<i>J. G. MacKenzie</i>	58
Manitoba, Some Aspects of Farm Organization, Farm Practices and Prospects for Forage Production in West-Central	<i>R. C. Nicholson</i>	90
Marketing Margins for Food in Canada, 1949-1953	<i>T. G. E. Woollam</i>	77
Marketing Practices of Cattle Ranchers in Southwestern Saskatchewan	<i>S. R. Burkell</i>	108
Mechanization in Canadian Agriculture	<i>H. R. Shaw and R. C. Gilstorf</i>	5
New Brunswick Egg Market, The Structure of the	<i>G. B. Murray</i>	29
Nova Scotia, The Sheep Enterprise in ..	<i>G. C. Retson and V. A. Heighton</i>	45
Ontario Fruits and Vegetables, Rail Distribution of	<i>W. C. Way</i>	81
Peace River Area of British Columbia, 1952, Land Use in the	<i>R. H. Campbell</i>	115
Prairie Farm Assistance Act, Some Economic Aspects of the ..	<i>M. E. Andal</i>	12
Prices of Farm Products, March 1, 1953, to February 28, 1954, Federal Agricultural Programs Affecting	<i>Marjorie R. Cameron</i>	32
Progress of Farmers in an Area Contiguous to the Saskatchewan-Carrot River Triangle	<i>J. Zeman</i>	18
Publications of the Economic Division:		
April— <i>An Economic Classification of Land and a Study of Farm Organization of the Biggar-Kerrobert-Unity Area, Saskatchewan, 1948</i> , by J. Zeman		48
— <i>A Farm Business Study in the Birtle-Shoal Lake Area of Manitoba</i> , by T. O. Riecken		48
— <i>Farm Practices on the Weyburn Loam and Regina Heavy Clay Soils of Saskatchewan</i> , by M. Ragush and F. F. Cline ..		48
— <i>A Study of Changes in the Farm Business in the Athabaska Area of Northern Alberta, 1945-51</i> , by K. Elgaard		48
June— <i>Farming on the Almasippi Soils of Central Manitoba, 1950</i> , by J. P. Hudson		70
— <i>Sales of Cheese in Selected Canadian Cities</i> , by L. E. Drayton		70
— <i>Sampling Experience in the Ottawa Cheese Survey. A Methodological Note</i> , by L. E. Drayton		69
— <i>Survey of the Production and Marketing of Potatoes in Alberta</i> , by W. Darcovich and J. A. Parfett		69
August— <i>Farm Organization, Income and Debt Paying Capacity in West Central Alberta</i> , by C. C. Spence		95

	PAGE
October— <i>Appraisal of Dryland Farming in the Special Areas of Alberta</i> , by William Darcovich	118
— <i>Canada Weights, Measures and Conversion Factors for Agricultural Products</i>	118
December— <i>Breakfast Bacon: Consumer Preference in Relation to Fat-Lean Distribution</i>	141
— <i>Co-operation in Canada</i> , by J. E. O'Meara	142
— <i>Credit Unions in Canada, 1953</i> , by J. E. O'Meara	142
— <i>The Market for Farm Products in Newfoundland, 1948-1950</i> , by W. C. Shipley	141
Publications, United Nations:	
June— <i>Commodity Trade and Economic Development</i>	70
— <i>Economic Bulletin for Europe, Second Quarter, 1953</i>	70
— <i>Statistical Yearbook (Annuaire Statistique) 1953</i>	70
— <i>Yearbook of International Trade Statistics, 1952</i>	70
August— <i>European Agriculture, A Statement of Problems</i>	95
— <i>Progress in Land Reform</i>	95
October— <i>Agricultural Development and Rural Reform in Denmark</i>	120
— <i>Co-operative Thrift, Credit and Marketing in Economically Under-Developed Countries</i>	120
— <i>Disposal of Agricultural Surpluses</i>	120
— <i>Economic Bulletin for Europe. First Quarter, 1954</i>	120
— <i>Economic Survey of Europe in 1953, Including a Study of Economic Development in Southern Europe</i>	119
— <i>Economic Survey of Latin America, 1953</i>	119
— <i>Improvement of Agricultural Extension Services in European Countries</i>	120
— <i>Review of International Commodity Problems, 1953</i>	119
— <i>World Economic Report, 1952-53</i>	119
December— <i>Agriculture in Asia and the Far East, Development and Outlook</i>	142
— <i>Agriculture in the Near East, Development and Outlook</i> ..	143
— <i>Economic Bulletin for Europe, Second Quarter, 1954</i>	144
— <i>Prospects for Agricultural Development in Latin America</i> ..	143
— <i>The State of Food and Agriculture, 1954. Review and Outlook</i>	143
— <i>United Nations Sugar Conference, 1953</i>	142
— <i>The Work of FAO, 1953-54. A Progress Report</i>	144
Publications, Other:	
June— <i>Disponibilités, Modes de Vente et Lieux d'Écoulement des Produits Agricoles, 1950-51-52, Région de Trois-Rivières, n° 6</i>	71
— <i>Food and Population and Development of Food Industries in India</i>	71
— <i>Proceedings of the Eighth International Conference of Agricultural Economists</i>	71

	PAGE
August— <i>Canadian Journal of Agricultural Economics. 1953 Proceedings Number</i>	96
— <i>Disponibilités, Modes de Vente et Lieux d'Écoulement des Produits Agricoles, 1950-51-52. Région du Saguenay, n° 11</i>	96
— <i>Farm Labour in Ontario</i>	96
— <i>Methods of Agricultural Extension</i>	95
— <i>Milk Distribution and Pricing in Great Britain</i>	95
— <i>The Use of Aircraft in Agriculture in the U.S.A.</i>	96
December— <i>Disponibilités, Modes de Vente et Lieux d'Écoulement des Produits Agricoles, 1951-52-53. Région du Bas-St-Laurent, n° 2</i>	144
— <i>Economic Report of the President</i>	143
— <i>Individuals' Saving: Volume and Composition</i>	144
— <i>Marketing Potatoes in Ontario</i>	144
Rail Distribution of Ontario Fruits and Vegetables	W. C. Way 81
Recent Trends in the Production and Distribution of Canadian Apples	D. W. Ware 101
Regina Plains and the Vibank-Windthorst Area, Saskatchewan, Farm Size and Tenure in Relation to Grade of Land, ...	K. A. Stutt 84
Some Aspects of Farm Organization, Progress and Adjustments on Land Class II in the Brown Soil Zone, Saskatchewan, 1952	H. L. Biehn 15
Saskatchewan-Carrot River Triangle, Progress of Farmers in an Area Contiguous to	J. Zeman 18
Saskatchewan River Delta, Land Utilization and Rate of Land Improvement on Lands in the	J. P. Hudson 104
Seasonal Variation in the Egg Supply Pattern	G. B. Murray 132
Sheep Enterprise in Nova Scotia, The ..	G. C. Retson and V. A. Heighton 45
Tariffs and the Factors Involved in Formulating Tariff Policies, with Particular Reference to the Fruit Industry	A. E. Richards 38
Tenancy in Ontario, Brief Notes on Trends in Farm	D. J. Packman 134
Trends in Food Expenditure Patterns in Canada	B. A. MacDonald 78
Wheat Yields and Farm Practices on Weyburn Loam and Regina Heavy Clay Soils	M. Ragush 9
"Woman's Touch"—in Canadian Farm Work, The	Helen C. Abell 37

**THE
ECONOMIC
ANNALIST**

FEBRUARY 1955

Vol. XXV, No. 1



**DEPARTMENT OF AGRICULTURE
OTTAWA, CANADA**

THE ECONOMIC ANNALIST

A BIMONTHLY REVIEW OF AGRICULTURAL BUSINESS

G. P. BOUCHER, Editor

FEBRUARY 1955

Vol. XXV, No. 1

CONTENTS

	Page
The Economic Situation.....	3
Some Railway Freight Rate Reductions..... <i>E. P. Reid</i>	6
The Farm Business in Northern Alberta, 1953.... <i>Gordon Haase</i>	8
Trends in Forage Production in Manitoba..... <i>W. G. Smith</i>	10
Changing Conditions on Specialized Wheat Farms in Southern Alberta..... <i>V. Gilchrist</i>	16
The Landlord-Tenant Situation on 200 Southern Ontario Farms, 1953..... <i>D. J. Packman</i>	20
Some Notes on Retail and Farm Prices of Food Products..... <i>G. E. Woollam</i>	23

MARKETING SERVICE, ECONOMICS DIVISION

J. F. BOOTH, Chief

Published by Authority of the Right Honourable James G. Gardiner
Minister of Agriculture

ANNUAL AND MONTHLY INDEX NUMBERS

WHOLESALE PRICES, FARM PRICES AND LIVING COST INDEXES

Year	Wholesale Prices 1935-1939 = 100				Farm Prices of Agricultural Products 1935-39 = 100 (e)	Commodities and Services used by Farmers 1935-39 = 100		Consumer Price Index (1949 = 100) (h)	Food Index (1949 = 100) (i)	Index of industrial production (1935-39 = 100) (j)
	(a) General Wholesale Index	(b) Farm Products	(c) Field Products	(d) Animal Products		(f) Equipment and Materials	(g) Eleven Factor Index			
1913.....	83.4					85.4		49.2	44.4	
1914.....	85.4					90.2	85.3	49.6	46.0	
1915.....	91.8					96.9	91.6	50.3	46.8	
1916.....	109.8					101.7	100.5	54.2	51.8	
1917.....	148.9					140.7	140.5	63.7	66.9	
1918.....	166.0					164.1	160.2	72.0	76.9	
1919.....	174.7					169.1	167.9	78.8	82.2	
1920.....	203.2					190.1	186.5	90.5	94.4	
1921.....	143.4					147.4	152.5	80.9	72.5	
1922.....	126.8					124.6	134.1	74.9	61.5	
1923.....	127.7					118.3	130.6	75.2	61.9	
1924.....	129.5					122.3	131.9	74.0	60.7	
1925.....	133.8					123.2	131.8	74.6	63.4	
1926.....	130.3	144.4	158.5	130.2		119.9	130.6	75.9	66.6	
1927.....	127.3	138.6	149.4	127.8		119.9	131.2	74.6	65.3	
1928.....	125.6	136.3	134.3	138.2		118.3	129.3	75.0	65.6	
1929.....	124.6	140.8	137.2	144.4		117.6	127.9	175.8	67.1	
1930.....	112.9	119.5	105.8	133.3		105.6	117.0	75.3	65.6	
1931.....	94.0	78.9	65.0	92.7		92.2	100.9	67.9	51.4	
1932.....	86.9	65.5	60.4	70.5		89.3	93.3	61.7	42.8	
1933.....	87.4	69.3	69.3	69.2		88.8	89.8	58.8	42.3	
1934.....	93.4	83.5	80.5	86.5		96.8	95.5	59.6	46.2	
1935.....	94.4	89.2	84.4	94.1	88.0	95.6	95.4	59.9	47.2	85.6
1936.....	96.7	97.9	102.2	93.7	96.9	98.7	98.1	61.1	48.8	94.6
1937.....	107.8	117.4	128.9	106.0	119.7	108.4	105.3	63.0	51.4	108.0
1938.....	102.0	102.9	100.9	104.8	105.0	101.7	101.7	63.7	51.7	102.0
1939.....	99.2	92.6	83.7	101.5	9.18	95.7	99.3	63.2	50.2	109.7
1940.....	108.0	96.1	85.4	106.7	96.8	101.8	106.8	52.6	52.6	131.4
1941.....	116.4	106.6	88.9	124.4	110.2	107.8	116.1	69.6	57.9	164.8
1942.....	123.0	127.1	109.7	144.6	133.1	119.2	131.6	72.9	63.4	195.7
1943.....	127.9	145.4	129.0	161.8	157.8	122.4	143.4	74.2	65.2	208.5
1944.....	130.6	155.3	144.5	166.1	172.4	126.0	248.0	74.6	65.5	212.4
1945.....	132.1	166.4	162.5	170.2	185.7	125.9	152.1	75.0	66.3	187.2
1946.....	138.9	179.5	177.9	181.2	204.1	128.0	157.0	77.5	70.0	171.9
1947.....	163.3	192.2	184.1	200.2	215.8	139.5	170.4	84.8	79.5	187.8
1948.....	193.4	232.1	200.6	263.7	255.8	173.1	197.4	97.0	97.5	196.3
1949.....	198.3	228.7	191.9	265.4	255.4	180.3	204.1	100.0	100.0	199.6
1950.....	211.2	236.7	191.9	281.4	260.8	189.9	210.4	102.9	102.6	211.5
1951.....	240.2	268.6	200.4	336.9	296.8	206.0	230.0	113.7	117.0	226.5
1952.....	226.0	250.2	223.0	277.5	274.4	215.8	243.1	116.5	116.8	232.9
1953.....	220.7	220.9	178.1	263.8	249.4	207.4	239.8	115.5	112.6	248.4
1954.....					231.1			116.2		
1953										
Nov.....	218.7	208.4	158.7	258.0	229.2			116.2	113.4	250.6
Dec.....	219.0	210.2	158.9	261.6	229.7			115.8	112.1	235.5
1954										
Jan.....	219.8	212.9	159.4	266.3	233.2	204.0	231.1	115.7	111.6	229.1
Feb.....	219.0	212.3	160.0	264.7	234.0			115.7	111.7	239.4
Mar.....	218.6	210.2	158.3	262.0	233.0			115.5	110.7	236.8
Apr.....	217.9	209.0	157.6	260.4	231.3	204.1	238.0	115.6	110.4	242.4
May.....	218.2	213.1	158.2	268.0	233.3			115.5	110.2	245.9
June.....	217.8	213.1	158.9	267.3	234.9			116.1	112.0	252.9
July.....	217.4	217.8	173.6	26.21	234.5			116.2	112.1	239.1
August.....	215.8	207.9	167.6	248.2	231.2	201.9	238.7	117.0	114.4	247.2
Sept.....	215.3	204.1	162.6	245.5	227.5			116.8	113.8	253.9
Oct.....	214.3	201.1	161.8	240.5	220.0			116.8	113.8	256.4
Nov.....	214.8	203.8	164.0	243.6	219.3			116.8	113.4	
Dec.....					219.7			116.6	112.6	

(a) Canada. Dominion Bureau of Statistics, Labour and Prices Division. *Prices and Price Indexes*. Ottawa, Monthly.

(b) Ibid. (a). Wholesale prices of products of Canadian farms.

(c) Ibid. (a). Wholesale prices of grains, hay, tobacco and potatoes.

(d) Ibid. (a). Wholesale prices of animals and animal products.

(e) Canada. Dominion Bureau of Statistics, Agriculture Division. *Index Numbers of Farm Prices of Agricultural Products*. Ottawa, Monthly.

(f) Canada. Dominion Bureau of Statistics, Labour and Prices Division. *Price Index Numbers of Commodities and Services Used by Farmers*. Ottawa, Jan., Apr. and Aug. Includes prices of commodities in 8 groups including farm implements, building materials, gasoline, oil and greases, feed, fertilizer, binder twine, seed and hardware.

(g) Ibid. (f). Includes the 8 commodities indicated above plus tax rates, interest rates and farm wage rates.

(h) Canada. Dominion Bureau of Statistics, Labour and Prices Division. *Price Movements*. Ottawa, Monthly.

(i) Canada. Dominion Bureau of Statistics, Labour and Prices Division. *Prices and Price Indexes*. Ottawa, Monthly.

(j) Canada. Dominion Bureau of Statistics. Canadian Statistical Review. Ottawa, Monthly.

THE ECONOMIC SITUATION

The Agricultural Outlook for Canada in 1955.—The world economic outlook is more reassuring in many respects than at the end of 1953. Business activity in North America, although somewhat below the high level of 1953, is stable or slightly increasing; in the United Kingdom, most of Western Europe, and some Commonwealth countries an expansion of employment and output is under way.

Over-all world trade continues at a high level and the foreign exchange position of overseas countries is generally stronger than at any time since the war. Apparently, there is little or no reason to expect a reversal in the substantial progress achieved in the removal of import restrictions against dollar goods. However, the importation of agricultural products is still restricted, to some extent, by controls remaining in effect in the important United Kingdom and United States markets. Large surplus disposal programs are being initiated in the United States, and the manner of carrying out these programs could influence the regular flow of agricultural trade.

Economic conditions in Canada have improved slightly during the second half of 1954 and continued improvement is expected in 1955. The combined volume of government expenditures (federal, provincial, and municipal) is likely to be about the same in 1955 as in 1954, and capital investment is expected to remain at a high level. The downward trend in Canadian exports appears to have ended. Conditions prevailing in the world wheat market point to a possible increase in sales; increased volumes of iron ore and aluminum will be available for export; and markets for base metals and forest products are expected to remain firm.

Prospects for the sale of agricultural products in 1955 are good. The export situation should improve and sustained consumer incomes per caput should increase domestic food consumption. Farmers' cash receipts will probably be somewhat higher than in 1954. A large part of the 1954-55 western wheat deliveries will likely take place during the first seven months of 1955 and, with fall deliveries above the record low-level deliveries of the 1954 fall season, returns from wheat sales should be higher in 1955 than in 1954. According to present indications there will be no significant

change in livestock cash receipts during 1955; increased marketings are likely to offset any prospective price declines.

Farm net income will be maintained at *about the 1954 level*. On the basis of an average crop, estimated higher deliveries and smaller carry-over stocks at July 31, 1955, farm inventories of grain at the end of 1955 will be below the 1954 year-end levels. The continuing decrease in year-end farm inventories of grain would, however, be offset by the expected gain in cash income.

The requirements for farm workers in 1955 will probably be slightly higher than in 1954. A slightly larger number of workers may be available to agriculture so that the supply-demand relationship will be about the same as in 1954. There will be a surplus of farm workers during the winter, and it is expected that it will again be necessary to move workers to deficit areas during the periods of peak labor requirements.

Prices of farm supplies—fertilizers, pesticides and farm machinery—should remain at about 1954 levels. Supplies should be ample to meet farmers' requirements.

The volume of farm products traffic on Canada's railways and waterways will depend on the rate of clearance for overseas shipment of wheat from ocean ports. Both grain and total agricultural traffic decreased in 1954, but could increase in 1955, in spite of the small grain crop, by drawing from large storage stocks. Equalized class freight rates will not affect agricultural traffic greatly, as only about ten per cent of the farm commodities move under class rates. However, the national freight rate policy calls for some degree of equalization of commodity rates in due course. Low "agreed charge" rates will apply on some movements of butter, canned foods, and potatoes until further notice.

Occupancy of commercial cold storage is expected to decline somewhat, and frozen food storage facilities available to consumers in locker plants are likely to change little during 1955. However, facilities provided in the home by home freezers and domestic refrigerators will probably expand considerably.

World production of wheat in the 1954-55 crop year is estimated at about 6.8 billion bushels, or six per cent below the 1953-54 output. Stocks available for

¹Based on statements presented by commodity committees at the annual Federal-Provincial Agricultural Conference held in Ottawa, December 6 and 7, 1954.

export and carryover in the hands of the four major exporters in the fall of 1954 were about one per cent higher than stocks in the fall of 1953. Large wheat crops have been harvested by some importing countries, but quality is low in many areas and accumulated reserves in some importing countries have been largely depleted. So, it appears that a fairly substantial export market exists, particularly for high quality wheat, during the current crop year.

Because of an unprecedented rust epidemic, unfavorable weather and other adverse factors, wheat production in Canada in 1954 fell below 300 million bushels, the smallest crop since 1943. Grades of new crop western wheat are relatively low; nevertheless, baking strength of flour made from milling grades of the 1954 crop is good. At October 1, 1954 Canada had about 684 million bushels of wheat available for export during the remainder of the crop year and for year-end carry-over, compared with 796 million bushels at October 1, 1953. Exports from Canada during 1954-55 are expected to exceed the 1953-54 level of 255.1 million bushels; domestic disappearance is also expected to be greater owing to increased use of wheat for livestock feed. If these trends are realized, the carry-over of wheat in Canada at July 31, 1955 will be materially reduced from the next-to-record level of 594.2 million bushels on hand a year earlier.

Total supplies of feed grains for 1954-55 are about 15 per cent below those for 1953-54, but still well above average. The lower supplies for this year are largely due to sharply reduced production of oats and barley. Feed requirements will likely be a little higher than last year, as a result of an increase of about six per cent in the livestock population, but exports are not expected to reach the near-record levels of 1953-54. Because of lower supplies, increased domestic requirements, and prospects for a reasonably good export volume, there should be fairly pronounced reductions, especially for oats, in year-end carry-over stocks at July 31, 1955.

An increased output of meat animals is probable in 1954-55 (year ending September 30), with production of hogs up about 19 per cent and smaller increases ranging from five to seven per cent in marketings of cattle, calves and sheep and lambs. It is unlikely that the domestic market will be able to absorb the

supplies of hogs, cattle and calves that will be available and, therefore, Canadian prices will be very closely related to comparable United States prices.

With the exception of hogs, Canadian livestock prices are expected to show little change from 1953-54, although slight declines may occur under the pressure of larger supplies. Hog prices are likely to show the greatest change. In general, domestic prices will depend largely on the availability of satisfactory export outlets for surplus livestock and livestock products.

A larger population and a continued high level of consumer demand should contribute to a small increase in total meat consumption. During 1954-55 Canadians may consume about 1.6 billion pounds of meat from inspected slaughter, an increase of three per cent from the preceding year. Relatively lower prices are likely to result in a substantial increase in domestic disappearance of pork. Estimates indicate that in 1954-55 domestic disappearance of pork from graded hogs may average about 94 thousand hogs weekly, an increase of 12 per cent from 1953-54. On the other hand, disappearance of beef may average about 31 thousand head weekly, a decline of about four per cent. The increase in the consumption of veal and lamb is estimated at six and seven per cent respectively.

Exports of livestock and meats will probably increase substantially from 1953-54. It is estimated that in 1954-55 the surpluses over domestic use may amount to about 120 million pounds of pork, 100 million pounds of beef and three million pounds of veal.

Milk production in 1955 is estimated at 17 billion pounds, a slight increase from the 1954 total. Production of creamery butter and dry skimmed milk is expected to be about the same as in 1954. An increase in the amount of milk used for fluid purposes and in the production of concentrated whole milk products is probable, but cheddar cheese output may drop slightly. Domestic disappearance of most dairy products is expected to rise somewhat in accordance with population increases. No major changes in the volume of exports are foreseen.

Little change is expected in the egg and poultry market, compared with 1954. The egg market will not be stronger in 1955 until at least June, and then may strengthen only if the hatch is smaller than in 1954.

The combined effects of a record poultry crop, low prices and aggressive merchandising in the United States had a depressing influence on the Canadian poultry meat market in 1954. This situation is not expected to change greatly in 1955 and the poultry outlook is thus closely linked to that for the United States, where conditions are not expected to differ much from those in 1954. Prices for the turkey crop will be better than in 1954 if producers in Canada and the United States reduce production from 1954 levels. Prices of fowl, as in 1954, will be greatly influenced by the American fowl market. The outlook for commercial broilers and farm chicken depends more on conditions in Canada than the outlook for fowl and turkey; these conditions are not likely to differ greatly from those prevailing in 1954.

The 1955 apple crop may approximate 15 million bushels, if weather conditions are favorable. Large crops of tender and small fruits, particularly apricots, peaches, cherries and raspberries, are also expected.

Domestic stocks of potatoes, and some imports, will probably ensure adequate supplies for the remainder of the 1954-55 season. Prices are well above those prevailing last year. Prices received by farmers for the crop harvested usually exert a considerable influence on plantings the next year. If farmers plant about the same acreage as in 1954 (296 thousand acres) and obtain yields equal to the 1948-52 average (187 bushels per acre) then a crop of almost 56 million bushels will be forthcoming in 1955.

Inedible oilseed supplies are somewhat higher for 1954-55 than they were for 1953-54; rapeseed production has increased substantially but total flaxseed supplies are a little smaller than last year. Flaxseed exports are likely to be fairly large but domestic crushings may be lower than in 1953-54; prices are not expected to be much higher.

The supply of edible oilseeds from domestic production is the largest ever recorded, mainly because of a further increase in soybean production. Soybean

prices were rather low at harvest time but some increase in price is expected during the remainder of the crop year.

As a result of an all-time record crop of Canadian Leaf in 1954, stocks of old leaf tobacco on hand at September 30, 1955 are expected to reach 166.6 million pounds, or 6.6 million pounds more than the figure for the same date in 1954. These stocks represent a supply of about 19 months, which is slightly less than normal, in view of the estimated increase in consumption in 1954-55.

Exports of tobacco in 1955 may exceed 50 million pounds; if this total is reached it will represent an all-time high for tobacco exports from Canada. It is estimated that manufacturers will use about 106 million pounds of tobacco in 1955, compared with 98 million pounds in 1954.

Production of registered and certified cereals seeds was seriously affected in 1954 by very unfavorable harvesting weather, rust and frost, and was smaller than in 1953. However, supplies for 1955 planting should be sufficient to meet over-all requirements. Good quality non-pedigreed seed, particularly of oats, will be scarce in many areas; it will thus be necessary to move seed from surplus to deficit areas.

Seed production of alfalfa and clovers was much lower than in 1953 but production of most grass seeds was larger. With the exception of alfalfa and red clover, supplies of most forage crop seeds are available in quantities exceeding normal domestic use. It is expected that red clover seed will retail at a near-record price in 1955, a situation which will tend to reduce purchases of this seed. Farmers will probably substitute, where possible, other seeds such as alsike, timothy and alfalfa. Because of a near-record alfalfa seed crop in the United States supplies are available to meet the Canadian shortages of both red clover and alfalfa seed.

Prices to growers for nearly all forage crop seeds, except creeping red fescue, are above the 1953 levels and retail prices are therefore expected to be higher in 1955.

Corrigenda: In the December 1954 issue, page 125, top of the second column, "smaller" should read "larger".

On page 136, Figure 2, Essex County, in the extreme southwest corner of the map, should be numbered 13.

SOME RAILWAY FREIGHT RATE REDUCTIONS¹

E. P. REID

In postwar years railway freight rates increased by a series of authorized jumps to almost double the wartime level; the final general increase was on March 16, 1953. These years were marked by increases in various price and cost-of-living indexes, which have tended to level off or decline slightly since the 1952 peaks. The period of almost two years during which railway freight rates have been subject to no general increase was marked by an abatement in inflationary forces.

The several general railway freight rate increases since 1948 tended to follow increases in wages, and other operating costs. The recent Sloan award of fringe benefits to a large group of railway workers may lead to another general rate increase application. However, unlike the situation following other recent wage awards, railway traffic is now showing a downward trend. In such circumstances, increased rates are not necessarily a solution even in the opinion of railway management.

It may be observed that the trend in rates during 1953 and 1954 has been downward, taking account of selective decreases instituted in various ways from time to time. Several of these reductions have applied on agricultural traffic.

Two legislated decreases or abatements had been implemented in 1952:

(1) In January the One-and-One-Third Rule became effective. Alberta points secured some benefit from low transcontinental (Panama Canal competitive) rates from the East to British Columbia Coast points; no Prairie point will pay more than 133 $\frac{1}{3}$ per cent of any rate to the Coast. There is no requirement that transcontinental rates be not altered.

(2) In May the Economic Bridge reductions on most shipments through Northern Ontario were instituted. The aggregate benefit to shippers is to be \$7 million a year, which amount is paid to the railways to maintain their roadbed from Sudbury to Fort William.

Both these measures were recommended by the Royal Commission on Transportation in February 1951.

Other decreases and abatements implemented in 1953 and 1954 include:

(1) An early selected voluntary rate reduction to alleviate a situation brought about by successive general increases was applicable on British Columbia *soft fruits* to Prairie points in May 1953. The varied reductions restored the Okanagan Valley's competitive position with the State of Washington to most points and with Ontario to Winnipeg.

(2) A concession on perishables generally was a reduction of *refrigeration charges* by about 20 per cent in July 1953.

(3) Maritime *potato* shippers obtained a rate reduction in September 1953 for shipments to their important Quebec and Ontario markets. This reduction varied from four cents (6 $\frac{1}{2}$ per cent) to Ottawa to ten cents (14 per cent) to Sudbury and Windsor. By an agreed charge, approved in October 1954 and backdated to March, the far east and far west ends of Prince Edward Island obtained parity with the Summerside-Charlottetown zone for shipments to Quebec and Ontario. This erased a differential of from one to five cents against the outer zones.

(4) Maritime and other eastern *potato* shippers were relieved of a surcharge for use of refrigerator cars in October 1953. This had been a long-standing arrangement for all freight lower than fifth class (potatoes are eighth Class).

¹ See "Recent Freight Rate and Transportation Developments". In *The Economic Annalist*, April 1953, pp. 43-46.

The scale of charges wiped out may be illustrated by Charlottetown-Montreal, 500-750 mile range, \$11.90 per car per trip; Woodstock, N.B.-Toronto, 750-1,000 mile range, \$14.86.

At the beginning of 1954, western Canada obtained the same cancellation of "reefer" charge for potato and vegetable shipments.

(5) Representative of recent greater use of the Agreed Charge provision of the Transport Act, 1938, was the reduction in *canned goods* rates from the East to British Columbia and Alberta authorized in January 1954 and retro-active to the previous September. This was a reduction of 14 cents to the Coast and 19 cents to Interior and Alberta points, about $6\frac{1}{2}$ per cent in each case. Shippers who are parties to the agreement must give the railways 85 per cent of their applicable traffic.

In July 1953, canned goods rates from the East to all Prairie points had been reduced about 25 per cent, not tied to an agreed charge.

(6) Of some contingent value to the *livestock* shipper, though not an actual rate reduction, was the increase in valuation limitations on cattle, hogs, calves and sheep authorized in February 1954. New limits in cases of loss or damage (previous rates in brackets) were: cattle, \$200 (\$150); hogs, \$50 (\$40); and calves and sheep, \$25 (\$20). There had been no change in 34 years.

(7) An agreed charge for Saskatchewan *butter* shipped east became effective in July 1954. From northwestern points reductions as great as \$1.25 per 100 pounds (45 per cent) were made; from eastern points in the province, $64\frac{1}{2}$ cents (32 per cent). Shippers must accept a higher carload minimum weight and deliver all applicable traffic to be eligible for this agreed charge. Numerous Manitoba points of origin were added in October.

(8) Prairie *livestock* shippers of small carloads or approximate truckload quantities received reductions in July 1954 for distances up to 600 miles; published rates are slightly higher than for regular carloads but the minimum weight is 4,000 pounds less than for carload lots. The rates are, however, much lower than less-than-carload rates. This truck-competitive type of livestock rate has prevailed in the East for some years, with a 200-mile limit.

(9) The "piggyback", or highway trailers on flatcar, method of l.c.l. shipment has been used on Canadian railways on the Montreal-Toronto route for two years. At first no special rates were published and the service, being fast from warehouse to warehouse, was an attraction offered by the railways to shippers who might otherwise have used highway carriers. In September 1954 sharply reduced rates for many commodities moving in this service were made effective. The same series of reductions also applied to some railway carload merchandise traffic. The only agricultural commodity specified is *cheese*, although *groceries* are also included.

This miscellaneous list of railway rate reductions or "easings" is not matched by any similar group of increases, of which there have been few on agricultural products since early 1953. Rates on livestock, butter, fruits and vegetables, perishables in general, and on East-to-West and West-to-East movements generally in Canada have all been affected to some extent. There have been no significant adjustments in railway rates on grain (which are an exception to Economic Bridge reductions). However, rates for 1954 movements on the Great Lakes have been lower than during the previous few years. For example, the rate on wheat from the Lakehead to Montreal was reduced by $1\frac{1}{2}$ cents per bushel to $14\frac{1}{2}$ cents last May, and proportionally on shorter shipments.

A strong influence in these reductions was the railways' consciousness of truck competition. During recent months spokesmen for truckers have referred to the sharpening railway competition, expressed through the introduction of the above-mentioned rates and other reductions on non-agricultural articles.

For agricultural as well as other shippers the present situation is in contrast with the somewhat steady rate increases in the 1948-53 period. It is probable that future rate reductions will be selective rather than general, even though general increases may have built up the rates to be selectively reduced.

THE FARM BUSINESS IN NORTHERN ALBERTA, 1953

GORDON HAASE

The Wanham-Spirit River district of the Peace River area of Northern Alberta is considered typical of a large area of agricultural land in that part of the province and of forest land areas not yet used for farming. In 1953 the Economics Division made a survey of 120 farms in the district to secure information on existing types of farm organization and minimum requirements for the establishment of new settlers and farm units.

The study was restricted to farms on two classes of soils for which wheat yields averaged 12 to 15 and 15 to 20 bushels per acre respectively¹. In this article these soil groups are referred to as "fair quality" and "good quality" soils.

Size of Farm and Land Use.—Farms on the fair soils were generally larger (418 acres) and had a larger cultivated acreage (219 acres) than those on the good soils (380 and 197 acres respectively).

There was no marked difference in land use between the two soil classes. Wheat, the most important single crop for both soil classes, was grown on about 25 per cent of the cultivated acreage. Coarse grains occupied about 35 per cent of the cultivated land and legumes and other forage crops about 17 per cent. Summerfallow comprised about 11 per cent in 1953 and the other 23 per cent of the cultivated acreage was in miscellaneous crops.

There was no pronounced relationship between land use and farm size but the larger farms had a higher proportion of cultivated land in fallow than did the smaller farms.

Farm Practices.—The farmers interviewed said that newly broken land could be cropped to grain for about four consecutive years before yields dropped off appreciably and other practices became necessary to maintain soil fertility. About two-thirds of the farmers regarded summerfallowing as necessary in the area; about one-fifth of them thought that grasses were important in the rotation and about four-fifths believed that legumes improved the permanent management of their soil. Two-thirds of the farmers summerfallowed primarily to kill weeds and most of the others did so to "give the land a rest" and to build up soil fertility. About four-fifths of them used legumes to build up nitrogen in the soil and some grew them to open up the subsoil. A few grew them for their own seed; but most of them raised legumes to sell the seed. Grasses were raised in rotation by about one-third of the farmers to replace the fibre in the soil, by one-third for feed, by one-sixth for commercial seed sales and by the others, to kill weeds. The wheat yields in the study year were about two bushels per acre below the long-time average for the district.

Farm Capital.—Valuations were assigned to the assets on these farms in 1953 in order to measure the total capital invested in the farm business in the area. There was some difficulty in obtaining reliable estimates of the value of farm land, particularly unimproved land. For newly established farms the value of cultivated land is closely related to clearing costs, which may provide a better estimate of capital requirements than current valuations of improved

¹ The soils of the area are described in "Soil Survey of the Rycroft and Watino Sheets" by Wm. Odynsky and J. D. Newton. Research Council of Alberta, Report No. 56.

Table 1.—Total Investment according to Soil Rating and Cultivated Acreage, Wanham-Spirit River Area, 1953

	Fair Soils—Cultivated Acres		Good Soils—Cultivated Acres	
	Below Average	Above Average	Below Average	Above Average
	— dollars —			
Closing inventory of buildings.....	1,374	2,343	969	1,662
Closing inventory of breeding stock.....	512	908	477	646
Closing inventory of machinery and equipment.....	3,527	7,021	3,129	5,610
Average land value.....	4,976	6,907	4,031	10,438
Total farm capital.....	10,389	17,179	8,606	18,356
Average occupied acres.....	306	576	277	497
Average cultivated acres.....	132	341	121	283

land. The average closing inventory of buildings, livestock, and machinery in 1953 is shown in Table 1. The total investment, excluding that in land, averaged about \$6,500 per farm or about \$32 per cultivated acre. There is some indication that this investment per acre is about the same for farms on both soil classes, but is slightly higher for the smaller farms than for the larger units within each soil area. The cost of the cultivated land must be added to the capital for buildings, livestock and machinery in order to arrive at the total invested in the farm unit. Table 1 summarizes the operators' valuations of their land; these estimates may be used to calculate total investment requirements. As an alternative, the costs of clearing and breaking new land may be used to determine capital requirements for newly established units.

Table 2.—Returns to Capital and Family Labor according to Soil Rating and Size, Wanham-Spirit River Area, 1952-53

	Fair Soils—Cultivated Acres		Good Soils—Cultivated Acres	
	Below Average	Above Average	Below Average	Above Average
Number of farms.....	24	17	42	37
	— dollars —			
Receipts:				
Cash farm receipts.....	1,913	4,784	1,699	3,743
Value of farm produce used.....	559	662	506	722
Total receipts.....	2,472	5,446	2,205	4,465
Expenses:				
Cash farm expenses.....	955	2,001	796	1,371
Livestock purchases.....	80	23	52	120
Depreciation on buildings (excluding house).....	45	93	37	66
Depreciation on machinery and equipment.....	376	743	382	579
Total expenses.....	1,456	2,860	1,267	2,136
Change in Inventory:				
Livestock.....	179	69	161	298
Crop.....	199	-57	42	-18
Manufactured feeds and supplies.....	-5	42	25	55
Total change in inventory.....	373	54	228	335
Returns to capital and family labor.....	1,389	2,640	1,166	2,664

Farm Income.—The returns to capital and family labor, according to soil type and farm size, are listed in Table 2. In the year under review the returns were generally similar for farms in the fair and those in the good soil areas. However, there was a marked difference in income between large and small farms. There was a close relationship between returns to capital and family labor and the number of cultivated acres on all farms, although on the fair soils the return per acre for the small farms were somewhat higher than the returns for the larger farms.

Cash Living Expenses.—Average cash living expenses for the families on the farms studied in 1952-53 were between \$1,150 (average for farms on fair soils) and \$1,200 (average for farms on good soils) per family. These expenses varied somewhat in relation to size of farm and ranged from \$960 per farm on the smaller farms on fair soils to about \$1,400 per farm for the large farms in the same soil group.

Table 3.—Living Expenses and Perquisites according to Soil Rating and Cultivated Acreage, Wanham-Spirit River Area, 1952-53

	Fair Soils—Cultivated Acres		Good Soils—Cultivated Acres	
	Below Average	Above Average	Below Average	Above Average
Number of farms.....	24	17	42	37
	— dollars —			
Cash living expenses.....	964	1,407	1,048	1,376
Farm produce used.....	559	662	507	722
Depreciation on house.....	54	86	37	62
Repairs on house.....			6	1
Total living expenses and perquisites.....	1,577	2,155	1,598	2,161

Requirements for Newly Established Farms.—Calculations based on the figures in Table 2 show that the average returns to capital and family labor are about \$9.00 per cultivated acre for the group of farms studied. From Table 3 it may be inferred that \$900 is the minimum needed for cash living expenses in 1952-53 and that a farmer must have at least 100 acres of cultivated land to provide the minimum cash requirements for family living. In the establishment of a new unit it is impossible to provide for capital accumulation or debt repayment until 100 acres have been brought under cultivation and managed with the required buildings, livestock, and machinery (see Table 1). As cultivated acreage increases above 100 acres, the additional returns to capital and family labor will not all be available for capital accumulation; family living will absorb a part of this surplus.

TRENDS IN FORAGE PRODUCTION IN MANITOBA

W. G. SMITH

A marked upward trend in forage¹ acreage has developed in Manitoba during the last 30 years. This acreage doubled from 1921 to 1951. However, the increase in forage acreage as a percentage of the total improved land is not so pronounced; forage occupied 6.2 per cent of the improved land in 1921 and 9.1 per cent in 1951, an increase of 49.2 per cent (Table 1). From 1921

¹ In this article the term forage includes all cultivated grasses and legumes used for hay, pasture, or seed.

Table 1.—Total Acres in Improved Land, Grains and Forage, Manitoba, Census Periods, 1921-51

Year	Total Improved Area	Total Area in Grain Crops ^a	Total Area in Improved Pasture	Total Area in Cultivated Hay	Total Area in Forage	Per Cent of Improved Land in Forage
		— thousand acres —				per cent
1921	8,508	5,668	417	83	500	6.2
1926	8,346	5,933	312	207	519	6.2
1931	8,522	5,433	412	296	708	8.3
1936	8,855	5,627	426	387	813	9.2
1941	9,829	5,751	455	413	868	8.8
1946	9,773	6,001	514	310	824	8.4
1951	10,762	6,824	585	399	984	9.1

^a Includes wheat, barley, oats, rye, flax for seed, mixed or other grains and other field crops.

Source: *Census of Canada* 1921 to 1951 and *Census of the Prairie Provinces*, 1926 to 1946.

to 1951 the improved farm acreage increased from a little over eight million to slightly more than 10.75 million acres, the acreage in grain crops from just over 5.5 million acres to nearly 6.75 million, and the acreage in forage from 0.5 million to almost 1.0 million acres. The relative increase in the forage acreage was thus much greater than that of the total acreage in improved land or of the acreage in grain crops. However, the increase in forage acreage was not as consistent as indicated by census years; there were intercensal years when the acreage was either smaller or larger. Cultivated hay and improved pasture both contributed to the increase but cultivated hay accounted for the larger part.

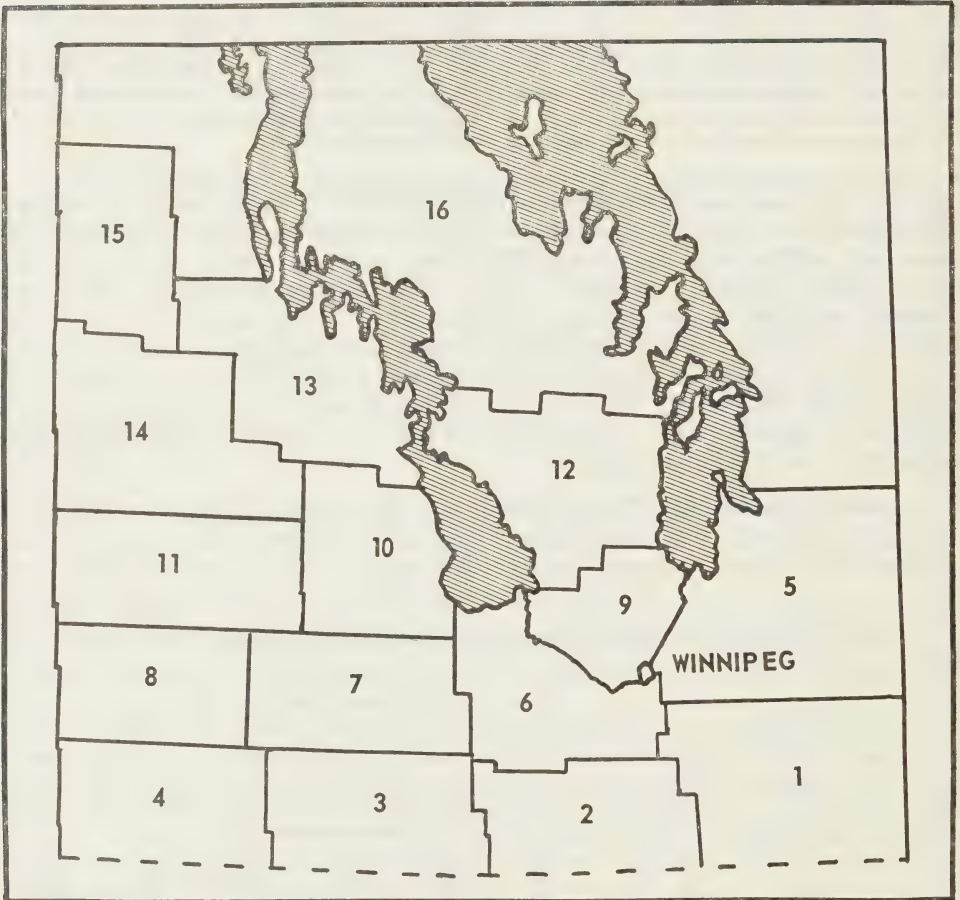
Areas of Production.—The forage acreage was extended between 1921 and 1951, but not uniformly in all areas (Table 2). In Census Divisions 1, 5, 12, 13 and 16 the forage acreage was five and one-half times larger in 1951 than

Table 2.—Total Area in Forage by Census Divisions, Manitoba, Census Periods, 1921-51

Census Division	Census Year						
	1921	1926	1931	1936	1941	1946	1951
	— thousand acres —						
1	18	36	50	73	84	87	96
2	80	77	112	113	107	83	83
3	44	46	48	41	40	40	55
4	73	32	35	45	41	42	39
5	21	27	41	55	62	62	83
6	68	86	117	111	122	103	90
7	40	48	58	76	74	63	78
8	42	33	37	64	42	29	49
9	14	20	27	29	37	36	47
10	27	33	58	59	66	66	66
11	15	15	17	24	24	22	43
12	10	13	23	29	46	55	78
13	14	16	36	30	48	47	66
14	21	17	26	32	29	36	40
15	10	17	18	26	30	30	33
16	3	3	5	6	16	23	38
Provincial Total.....	500	519	708	813	868	824	984

Source: *Census of the Prairie Provinces*. 1921 to 1951.

in 1921 (Figure 1). During this period the area of improved land increased two and one-half times. These Census Divisions are mostly fringe areas where agriculture is not well developed and soil productivity is low. The acreage in forage crops increased by 18 per cent and that in improved land by 17 per cent in Census Divisions 2, 3, 6 and 8, which include well developed farming areas. In southwestern Manitoba, where some soils are less drought resistant, the acreage in forage decreased by 45 per cent in Census Division 4 but the total acreage in improved land remained about the same.



FIGURES 1.—Census divisions, Southern Manitoba.

The areas in which forage crops predominate have changed since 1921. For example, the total forage acreage in Census Divisions 2, 4 and 6 constituted nearly half of the Manitoba total in 1921, but only a little more than one-fifth of it in 1951. On the other hand, the combined acreages in Census Divisions 1, 9, 11, 12, 13, 15 and 16 accounted for only 17 per cent of the total in 1921 but for 41 per cent in 1951.

The upward trend in forage acreage in Manitoba was fairly constant between 1921 and 1951, except for a slight downward trend between 1941 and 1946. The acreage increased over the 30-year period under study in Census

Divisions 1, 3, 5, 9, 11, 12, 14 and 15, mainly since 1941 in Divisions 11 and 16, and between 1921 and 1931 in Division 10; acreages increased up to the mid-1930's but have since decreased in Divisions 2, 6 and 8.

To determine the relative importance of forage in an area, the acreage must be considered in relation to the total acreage in improved land. In 1951 it accounted for as much as 23.2 per cent of all improved land in Census Division 16, but for only four per cent of the total forage acreage in Manitoba. On the other hand, the acreage in Census Division 2 represented eight per cent of the total forage acreage in Manitoba but only seven per cent of the improved land in that Census Division. Forage may be considered as an important crop in Census Divisions 1, 5, 12, 13 and 16.

The number of acres in cultivated hay¹ and alfalfa and farmers reporting these crops in Manitoba during the 1936-1951 period are given in Table 3. The acreage in cultivated hay decreased by nine per cent and the number of farmers reporting it by 25 per cent, which resulted in a 20 per cent increase in the average number of acres of cultivated hay per farm. The total acreage in

Table 3.—Area in Cultivated Hay^a and Alfalfa, Manitoba, Census Years 1936-51

	Census Year			
	1936	1941	1946	1951
Acres of cultivated hay.....	335,448	281,574	247,011	299,025
Number of farms reporting cultivated hay.....	16,487	15,110	11,967	12,270
Average acres of cultivated hay per farm.....	20.3	18.6	20.6	24.4
Acres of alfalfa.....	27,025	61,996	63,569	100,050
Number of farms reporting alfalfa.....	2,460	5,492	4,813	6,685
Average acres of alfalfa per farm.....	11.0	11.3	13.2	15.0

^a Includes all cultivated hay except alfalfa grown alone.

Source: *Census of the Prairie Provinces*. 1936 to 1951.

alfalfa increased 3.7 times; the number of farmers reporting, 2.7 times; and the average acreage per farm reporting, 28 per cent. For seven farmers who reported cultivated hay only one reported alfalfa in 1936, but in 1951 there were only two farmers reporting cultivated hay for one reporting alfalfa; there were nine acres in cultivated hay for one in alfalfa in 1936 compared with three and one acres respectively in 1951.

In 1951 the number of Manitoba farmers reporting cultivated hay was larger than that of farmers reporting alfalfa, and the average acreage of cultivated hay per farm reporting was larger than that of alfalfa (Table 4). However, there were variations within and among Census Divisions; soil condition, adaptability of alfalfa or other types of cultivated hay, and farmers' requirements and preferences are all factors which cause variations in acreage and in the number of farmers producing various crops. Cultivated hay was reported by one-quarter or more of the farms in Census Divisions 1, 5, 12, 13 and 15, and alfalfa by the same proportion in Census Divisions 5, 12 and 16. Seven of the 16 Census Divisions had 24.4 or more acres of cultivated hay per farm and five had 15.0 or more acres of alfalfa per farm. In 1951 the acreage in alfalfa comprised over one-quarter of the acreage in tame hay in Manitoba, and almost half of the tame hay grown in some Census Divisions.

Improved Pasture.—The acreage in improved pasture in Manitoba increased by 40 per cent during the 1921-51 period, the largest part of this increase occurring since 1941 (Table 5). The acreage in improved pasture was lower in

¹ Cultivated hay includes all cultivated hay except alfalfa grown alone.

Table 4.—Farmers Reporting Cultivated Hay^a and Alfalfa by Census Divisions, Manitoba 1951

Census Division	Cultivated Hay		Alfalfa	
	Farms Reporting	Average per Farm Reporting	Farms Reporting	Average per Farm Reporting
	per cent	acres	per cent	acres
1	43.7	38.3	11.8	12.6
2	12.4	19.7	6.0	10.0
3	17.9	19.8	7.2	14.5
4	11.2	24.3	7.1	14.4
5	44.6	19.4	25.5	16.2
6	17.5	35.6	7.0	13.8
7	23.2	28.6	16.3	16.3
8	14.3	29.2	4.8	13.5
9	22.4	26.3	11.4	14.0
10	21.1	27.0	6.4	12.5
11	17.0	16.2	6.2	10.7
12	26.7	19.2	41.5	16.7
13	26.4	26.4	7.6	10.3
14	17.8	17.5	4.4	9.5
15	36.5	18.1	18.5	15.3
16	24.8	18.2	30.2	19.8
Provincial Total....	23.4	24.4	12.8	15.0

^a Includes all cultivated hay except alfalfa grown alone.Source: *Census of the Prairie Provinces*. 1951.

1926 and 1931 than in 1921, and by 1941 it was only nine per cent above the 1921 acreage. Although the total acreage in improved pasture did not increase as much as that in cultivated hay, improved pasture in 1951 accounted for about 60 per cent of the total forage acreage. The improved pasture acreage was lower in 1951 than in 1921, in Census Divisions 2, 3, 4 and 8 and higher in 1951 than in 1921 in other Divisions.

Shifts in areas of production have also occurred. The improved pasture acreage in Census Divisions 2, 4 and 6 accounted for 46 per cent of the Manitoba total in 1921 and for only 27 per cent in 1951.

Table 5.—Acres in Improved Pasture by Census Divisions, Manitoba, Census Years 1921-51

Census Division	Census Year						
	1921	1926	1931	1936	1941	1946	1951
	— thousand acres —						
1	14	22	22	26	32	46	35
2	71	52	63	60	66	68	68
3	40	28	28	22	18	27	39
4	69	21	26	29	28	34	29
5	10	6	11	12	21	21	27
6	53	50	60	60	69	72	60
7	33	31	34	53	54	48	51
8	39	25	29	46	25	23	37
9	12	9	11	9	11	14	25
10	22	24	45	38	42	49	47
11	13	10	12	12	12	14	30
12	6	6	15	14	13	18	34
13	11	9	26	15	28	31	41
14	17	11	16	17	17	24	26
15	5	7	11	10	12	15	15
16	2	1	3	3	7	10	21
Provincial Total.....	417	312	412	426	455	514	585

When a field of improved pasture lies close to buildings and watering facilities the farmer is inclined to leave it in pasture for many years. So, the acreage in improved pasture varies less, from year to year, than that in cultivated hay, which is grown on a varying number of acres in different fields according to the rotation system followed.

Kinds of Forage Crops.—Alfalfa, sweet clover and brome grass are the main forage crops grown in Manitoba. Other crops include meadow fescue, crested wheat grass, timothy, millet, clovers other than sweet clover, intermediate wheat grass and tall wheat grass. Alfalfa is the leading crop. However, during the past 30 years there have been shifts in the relative importance of alfalfa, sweet clover and brome grass. Sweet clover was the main crop from 1924 to 1941; clover acreage increased steadily until 1934 and then declined.¹ The acreage in brome grass has risen since 1931 and by 1946 it ranked next to alfalfa. Before 1937 the alfalfa acreage was very small but by 1951 it occupied 100,000 acres and was Manitoba's largest single forage crop.

Uses of Forage.—In Manitoba all the improved pasture and most of the forage and tame hay are used as livestock feed; the remainder is used for seed or as a green manure crop. Forage legumes and grasses are soil improving and conserving crops. Most farms produce forage for livestock feed and for soil improvement and conservation.

Yields.—The average yield of tame hay and clover in Manitoba for the 1922-1953 period was 1.71 tons per acre, and ranged from 1.0 ton per acre in 1946 to 2.14 in 1926.² For alfalfa the average yield for the 1922-1951 period was 2.11 tons per acre and ranged from 1.59 in 1929 to 2.60 tons per acre in 1922. These yields are lower than those in the humid areas of Canada and the United States; rainfall is the limiting factor in forage production in Manitoba. The mean normal total precipitation is about 15 inches in the western part of the province and 20 inches in the eastern part. Moreover if rain does not fall during the growing season yields will be low even if the total annual precipitation is above average. Forage production is also limited by: the shortness of the growing season, damages to forage during very cold winters and prolonged periods of hot dry weather during the summer.

Summary.—During the last 30 years Manitoba farmers have increased their forage crop acreage. Although the improved pasture acreage increased less than that in cultivated hay, it represented as much as 60 per cent of the total forage acreage in 1951.

Hay and improved pastures are used mainly as livestock feed and also for seed or as green manure crops. Rainfall is a limiting factor in forage production in the province; yields are lower than those in more humid areas of Canada.

AMERICAN FARM ECONOMIC ASSOCIATION

The American Farm Economic Association held its winter meeting at Detroit, Michigan, December 28-29, 1954. The main papers dealt with: *The Supply Function of U.S. Farm Products under Conditions of Full Employment; Trade and Foreign Investment Implications of the U.S. Farm Products Disposal Program; Demand and Prices; Production Economics; Sample Surveys and Experimental Design; Markets for Watermelons; Management of Meat Inventories; and Scale Returns in Agricultural Marketing Firms.* At a luncheon meeting on December 29, Earl Butz, Assistant Secretary of Agriculture, Washington, D.C., gave an address on *The Agricultural Economist in the Political Environment of Policy Making.*

¹ Source: Manitoba, Dept. of Agriculture and Immigration. *Report on Crops, Livestock, Etc.* Winnipeg. Annually, 1924-1951.

² Source: *Ibid.* 1922-1953

CHANGING CONDITIONS ON SPECIALIZED WHEAT FARMS IN SOUTHERN ALBERTA

V. GILCHRIST

Most of Canada's wheat is produced on commercial farms in the prairie areas of Alberta and Saskatchewan. The entire production on these farms usually consists of wheat. To compare the economy of wheat farms on better soils (the Vulcan area) with that of wheat farms on marginal and sub-marginal soils (the Lomond area) a study of farming in the Vulcan-Lomond area of Alberta was made in 1935.¹ A similar study was made in 1952 in the Vulcan area, which is fairly representative of the more productive specialized wheat areas of the prairie wheat belt; these lie in the Dark Brown soil zone of the Prairie Provinces. This article will outline the organization, land use and tenure in the Vulcan area in 1952 and in 1935 to indicate changes that have occurred in the interval.

Size of Farm.—Wheat farms studied in the Vulcan area have followed the general trend towards larger farms in the prairie area, increasing from an average of 758 acres in 1935 to 789 in 1952. The size distribution of farms (Table 1) indicates a shift from the one and two quarter-section groups to the larger size groups.

Table 1.—Distribution of Farms According to Size, Vulcan Area, 1935 and 1952.

	Distribution of Farms	
	1935	1952
Number of farms in sample.....	232	146
Occupied quarters:	— percentage —	
1 and 2.....	25	14
3 and 4.....	36	38
5 and 6.....	21	24
7 and 8.....	9	12
9 and over.....	9	12

Land Use.—Wheat production seems to have a definite comparative advantage in the Vulcan area over all other products which might be raised there. Technological improvements, wartime hog raising and recent high prices for beef have not materially affected land use.² The wheat production pattern had become well established by 1935. Since then this crop has continued to utilize about half of the land on all sizes of farms (Table 2) except for a slight decrease when the federal government encouraged hog production in 1942 and 1943 and paid a "summerfallow bonus" in 1943. There has been a slight shift in acreage from coarse grains and "other crops" into summerfallow.

The figures in Table 2 indicate that size of farm had little influence on land use in either of the years considered in the study. The one and two quarter-section farms had a smaller percentage of their land in summerfallow and a larger percentage in "crops other than wheat" than did the larger farms.

Use of Capital.—Capital requirements to start farming in this area are much larger now than they were two decades ago. Some of this increase is

¹ Craig, G. H. and Coke, J. *An Economic Study of Land Utilization in Southern Alberta*. Ottawa, Canada Dept. of Agriculture, pub. 610, 1938.

² Unimproved land is omitted from the discussion as it constitutes a minor part of the productive land of each farm. Nearly all of the remaining unimproved land is not arable.

Table 2.—Crop Land Use, Vulcan Area, 1935 and 1952.

Size in Quarter Sections	Per Cent in Wheat		Per Cent in Coarse Grains		Per Cent in Other Crops		Per Cent in Summerfallow	
	1935	1952	1935	1952	1935	1952	1935	1952
1 and 2.....	50	51	9	9	9	4	32	36
3 and 4.....	52	53	7	5	4	3	37	40
5 and 6.....	52	52	5	4	4	3	39	41
7 and 8.....	50	52	7	3	6	2	37	43
9 and over.....	50	51	7	3	4	1	39	45
All sizes.....	51	52	7	4	5	2	37	42

the result of higher prices¹ but much of it is due to the additional equipment needed for economical farming. The increase in total farm capital and the slight shift in its distribution on these wheat farms are indicated in Table 3. A smaller percentage of farm capital was invested in land and buildings in 1952 than in 1935, but a larger percentage was invested in machinery. Changes in livestock, feed and supplies may reflect short-run as well as long-run conditions since these capital items are subject to annual and even seasonal variations. However, these investments constitute a very small part of total farm capital so that their effect on the over-all variation in capital investment is small. The value of land, buildings and machinery is more stable; it may then be assumed that the figures given for these items depict a trend rather than occasional annual or other short-run changes.

The effect of size of farm on capital distribution is fairly consistent in each of the years under consideration. Larger farms have a somewhat higher percentage of their capital in land and a lower one in buildings and machinery, than do the smaller farms.

Increased capital investment in machinery is reflected in a much greater average number of some large machines—especially tractors, combines and swathers—on these farms in 1952 than in 1935 (Table 4).

Table 3.—Average Distribution of Farm Inventory Values According to Size of Farm, Vulcan Area, 1935 and 1952.

Size in Quarter Sections	Land		Buildings		Machinery		Livestock		Feed and Supplies		Total Farm Capital	
	1935	1952	1935	1952	1935	1952	1935	1952	1935	1952	1935	1952
	— per cent of total farm capital —										dollars	
1 and 2.....	60	54	20	19	12	19	7	5	1	3	5,789	23,363
3 and 4.....	63	57	18	15	13	21	5	5	1	2	11,607	44,273
5 and 6.....	66	61	16	12	14	21	3	4	1	2	18,434	66,045
7 and 8.....	68	67	13	10	14	17	4	4	1	2	22,652	84,965
9 and over.....	72	66	12	9	10	17	4	5	1	3	42,361	114,206
All farms.....	66	62	16	13	12	19	5	4	1	2	15,355	60,342

1 Prices of comparable land increased from an average of \$24.52 in the 1930-35 period (see Publication 610, p. 20, Table 12) to an average of \$47.16, as estimated by farmers in 1952. The index of farm machinery prices rose from 95.5 in 1935 to 194.4 in 1952 and that of building materials from 87.1 to 303.3. (See Dominion Bureau of Statistics publication, *Prices and Price Indexes 1949-1952*, p. 96, Table 12).

Table 4.—Average Numbers of Specified Types of Machinery per 100 Farms, Vulcan Area, 1935 and 1952.

Type of Machinery	Number per 100 Farms	
	1935	1952
Autos.....	82	94
Trucks.....	42	125
Tractors.....	79	141
Combines.....	34	100
Separators.....	23	.....
Swathers.....	.....	80

Use of Labor.—The increase in mechanization was accompanied by a decrease in labour input per farm. The war and postwar demands for manpower have brought about a greater degree of mechanization at a faster rate than might otherwise have occurred. Table 5 pictures the decrease in average total annual labor input per farm, some of which was due to less paid labor but most of it to a decrease in unpaid family labor. Apparently an average farmer in the

Table 5.—Average Man-Months Required Annually to Operate Farms, Vulcan Area, 1935 and 1952.

Crop Year of Study	Paid Labor					Unpaid Labor			Total Labor
	Yearly Help	Monthly Help	Daily Help	Maids' Help	Total	Family	Operator	Total	
	— man-months —								
1934-35...	0.94	2.45	1.31	0.83	5.53	4.87	11.76	16.63	22.16
1951-52...	0.85	2.49	0.58	0.70	4.62	0.91	11.52	12.43	17.05

area can operate a section-and-a-half farm by himself, hiring labor for about four-and-a-half to five months during the year. Most of this additional help is required at the seeding and harvesting seasons.

Financial Status.—There was a more noticeable change in the financial status of the operators than in any of the other aspects of wheat farming in

Table 6.—Average Operator's Net Worth and Indebtedness by Size of Farm, Vulcan Area, 1935 and 1952.

Size in Quarter Sections	Net Worth		Total Liabilities		Liabilities as a Percentage of Net Worth	
	1935	1952	1935	1952	1935	1952
— dollars —						
1 and 2.....	3,526	29,815	3,167	804	90	3
3 and 4.....	5,211	38,290	5,152	1,607	99	4
5 and 6.....	8,490	53,294	6,823	1,874	80	4
7 and 8.....	13,108	53,109	5,776	3,311	44	6
9 and over.....	19,206	84,443	11,435	2,663	59	3

the area. The value of assets rose and that of liabilities fell. Table 6 presents a comparative picture of the financial status of the farmers in 1935 and in 1952.¹

Land debt decreased in total and as a proportion of total farm indebtedness; machinery and family debts (store debts, life insurance, doctor, dentist, income tax and personal) also increased (Table 7).

In 1935 there was no apparent relationship between size of farm and land, machinery, or tax debts as percentage of total indebtedness. The situation was different in 1952; land debt was greatest on the largest farms but machinery and tax debts represented a smaller proportion of total indebtedness on these farms. The size of bank debts was associated with an increase in size of farm, which indicates that the larger farms make more use of bank credit facilities.

Tenure.—There were some changes in tenure during the period. The percentage of farms with rental contracts decreased from 65 per cent in 1935 to 60 per cent in 1952 and there was a marked tendency to shift from other

Table 7.—Composition of Farm Indebtedness and its Distribution According to Size of Farm, Vulcan Area, 1935 and 1952.

Size in Quarter Sections	Land		Machinery		Tax		Bank ^a	
	1935	1952	1935	1952	1935	1952	1935	1952
	— per cent of total liabilities —							
1 and 2.....	75	30	3	26	6	7	1	18
3 and 4.....	72	38	5	24	5	2	4	18
5 and 6.....	72	29	13	18	5	1	3	27
7 and 8.....	71	53	8	6	7	1	3	24
9 and over.....	79	59	5	0	9	1	.....	30
		Other Farm Debt		Total Farm Debt		Total Family Debt		
		1935	1952	1935	1952	1935	1952	
— per cent of total liabilities —								
1 and 2.....	10	10	96	91	3	9		
3 and 4.....	10	11	98	93	2	7		
5 and 6.....	4	5	98	80	2	20		
7 and 8.....	6	3	97	87	3	13		
9 and over.....	6	2	99	92	1	8		

^a Most of the bank debt in 1952 would have been contracted for a Farm Improvement Loan for machinery.

types of agreement to the “one-third crop share” in which the landlord furnishes the real estate and its maintenance (including taxes) in return for one-third of all crops produced. In 1935, 53 per cent of the rental contracts were of the “one-third crop share” type; in 1952 this had increased to 67 per cent.

Investment in machinery was the only kind of investment affected by types of tenure. The increase in machinery investment was relatively greater for renters than for owners or part-owners.

Summary.—This study of specialized commercial wheat farms in the Vulcan area indicates the development of trends similar to those which occurred for most other types of farming in Canada. The average size of farm increased;

¹ No attempt is made in this article to analyze the composition of the assets, particularly their liquidity, but the distribution of capital illustrated in Table 3 indicates that a large portion of the assets consists of land, buildings and machinery.

labor input decreased (particularly family labor) and was accompanied by an increase in machinery and equipment. Land represented a smaller, and machinery a larger proportion of the total investment in the farm business in 1952 than in 1935. The value of total farm capital was three to four times greater in 1952 than 17 years before.

However, certain trends may be peculiar to this type of farming. Land use has changed very little, which means that wheat production enjoys an advantage over other types of production in the Vulcan area. The financial status of the average farm has changed more than any other aspect of the farm business; it has improved greatly since 1935 and the average operator is now in a fairly sound financial position.

THE LANDLORD-TENANT SITUATION ON 200 SOUTHERN ONTARIO FARMS, 1953

D. J. PACKMAN

One of the objectives of a study of 200 rented farms made during the summer of 1953¹ was to secure information on the characteristics of existing farm leases. Records were obtained in areas with a rather high proportion of farm tenancy in the following counties: Essex, Kent, Norfolk, Northumberland, Ontario, Haldimand, Victoria, Elgin, Prince Edward, York, Durham, Hastings, Oxford and Peel.

Common Types of Leases

Cash, crop-share and crop-and-livestock-share renting are the three basic methods of renting land in Ontario. However, there are many variations from these general types. They usually consist of a combination of two of the basic methods. The crop-share leases are in common use on farms where the land is very fertile and almost all tillable. The tenants usually have little capital and the owners have to exercise supervision and carry most of the risks. Cash rental is popular with tenants who own livestock and equipment and have enough capital; they may rent livestock farms and relieve the owners of much of the financial risk.

The crop-and-livestock-share renting type is rapidly gaining popularity. For many tenants who operate farms under this type of lease, lack of capital is the limiting factor which prevents them from engaging in livestock farming. On the other hand, elderly owners of farms, on which pasture and feed crops occupy the major portion of the crop acreage, may be pleased to find tenants skilled in handling livestock and interested in eventually buying the farm. Many father-son arrangements are of this type.

Of the 200 leases studied, 82 were cash rental, 85 were crop-share, and 33 were crop-and-livestock-share contracts (Table 1). Complete farm units were rented by 132 farmers and only 68 farms were partly-owned, partly-rented.

The average farm contained 145.5 acres of which 102.1 acres were rented. The distribution of farms by size and type of contract is presented in Table 2.

Leases—Written or Oral?—As a general rule, farm leases have proven to be most satisfactory when in written form and witnessed by two disinterested parties. Landlord and tenant should each have a copy. Only 56 per cent of the landlord-tenant agreements on the farms studied were in written form. The cash rented farms had a larger proportion of written contracts (62 per cent) than those on a share rental basis (52 per cent).

¹ Study undertaken jointly by the Dept. of Agricultural Economics of the Ontario Agricultural College and the Economics Division.

Table 1.—Distribution of Agreements by Type and Tenure, 200 Farms, Ontario, 1953.

Type of Agreement	Farms		
	Partly-Owned Partly-Rented	Entirely Rented	Total
	— number —		
Cash rental			
Livestock.....	18	43	61
Cash crop.....	7	14	21
Total cash rental.....	25	57	82
Crop share			
Tobacco.....	5	26	31
Grain.....	23	17	40
Garden crops.....	2	7	9
Hay.....	3	2	5
Total crop share.....	33	52	85
Crop and livestock shares.....	10	23	33
Grand totals.....	68	132	200

Written agreements do not constitute a complete guarantee of success. However, they are likely to contribute to better relations between landowner and tenant in two ways. First, the preparation of a written agreement provides an opportunity for the discussion and settlement of points that may be overlooked in an oral agreement. Second, it calls for precision in writing the various provisions of the lease and thus avoids any misunderstanding that may result from forgetfulness or the vagueness of some oral agreements. A written lease protects landlord and tenant alike.

Length of Agreement.—The length of the different types of agreements varies considerably. The year-to-year lease is common throughout Ontario; 58 per cent of all leases studied, or 75 per cent of the share rental and 48 per cent of the cash rent contracts, were made on this basis.

Table 2.—Average Acreage by Types of Agreement and Tenure, 200 Farms, Ontario, 1953.

Type of Agreement	Average Acreage per Farm		
	Owned	Rented	Total
	— acres —		
Cash rental			
Livestock.....	45.6	124.8	170.4
Cash crop.....	37.0	111.4	148.4
Average.....	43.5	121.6	165.1
Crop share			
Tobacco.....	13.6	66.7	80.3
Grain.....	62.5	98.0	160.5
Garden crop.....	40.6	30.6	71.2
Hay.....	78.2	85.0	163.2
Average.....	43.4	78.6	121.9
Crop and livestock share.....	43.5	114.1	157.6
Average all farms.....	43.4	102.1	145.5

Of the cash rent contracts, 32 per cent were made for five years, only two per cent for more than five years and eight per cent on a continuing basis. None of the share rent contracts was made for a period exceeding five years but eleven per cent were made on a continuing basis. Most of the agreements terminated on either the first of March or April or at the end of December.

Length of Tenure.—The frequency with which tenants move from farm to farm constitutes a serious tenure problem. If length of tenure on a farm were extended the tenants would be encouraged to follow better farm practices; they would probably grow more clover and alfalfa, use more fertilizers, keep more livestock and adopt a better balanced farming system.

The tenants interviewed had been on their farms an average of 6.8 years. Farms rented on a cash basis retained their tenants for a much longer period than share rented farms; 8.2 and 4.2 years respectively, compared with an average of 6.8 years for all farms studied. The livestock farms retained their tenants an average of 9.7 years compared with 4.2 years for the cash crop farms. The closer business connections between the tenant and the landlord on farms with livestock share arrangements may account for the longer periods of tenure on these farms. Likewise, on a cash rented farm where livestock is the major enterprise the tenant finds an incentive to pursue long term plans for building up his herd before he purchases a farm.

Compensation for Improvements.—The installation and maintenance of adequate farm improvements is an important problem on rented farms. Most renters will feel justified in making and maintaining these improvements only if they expect to be compensated for the unexhausted improvements which remain on the farm when they leave.

On the farms studied, the landlords gave little consideration to compensation for improvements made by the tenants during their tenure. Only five per cent of the agreements contained compensation provisions. These agreements generally specified that the tenant be paid for any materials used in making improvements but did not provide compensation for the use of labor. It is only fair that tenants be compensated for improvements made to the landlords' property but it is no less fair that the landlords themselves be compensated for damages resulting from exploitation and abuse of their property by the tenants. This is one aspect of rental agreements which also deserves attention.

Joint Planning.—Joint planning of farm operations is much more common on share crop than on cash rented farms. The nature of share-crop rental contracts is such as to require the close co-operation of both parties in planning the farm business. Generally, the landlord and the tenant must agree on such matters as the acreage in different kinds of crops; and if livestock is kept, an agreement should be made concerning the use of pasture and hay land and home grown feed. Most of the operators of share-rented farms included in the study had agreements which stipulated the acreage to be seeded in soil building crops each year and complete details on the allocation of receipts and expenses. The distribution of receipts varied with the crops grown and the general bargaining strength of individual landlords and tenants. As a general rule, no two contracts were exactly alike—each appeared to be tailored to suit the needs of the individual farm concerned.

Age of Landlords and Tenants.—The average age of the landlords on the farms studied was about 58 years, about one-half of them were younger and one-quarter of them were 70 years of age or older (Table 3). Fifty-eight per cent of the landlords were either actively engaged in farming or were retired farmers and 30 per cent were engaged in other occupations. The rest of the farms were either owned by widows or held in estate.

The tenants were much younger than their landlords; their average age was 37 years. Sixty-one per cent were under 40 and only four per cent over 60 years of age.

Table 3.—Percentage Distribution of Landlords and Tenants by Age Group, 200 Ontario Farms, 1953.

Age Group	Landlords Tenants	
	— per cent —	
29 years or less.....	3.1	27.5
30 — 39.....	6.3	33.8
40 — 49.....	11.0	18.6
50 — 59.....	28.3	16.2
60 — 69.....	26.2	3.4
70 — 79.....	19.3	0.5
80 or more.....	5.8	0.0
Total.....	100.0	100.0

On the average, tenants in the 60-69 age group looked after 199 acres and those who were less than 30 years of age worked on 122 acres. Likewise the older landlords operated a much larger acreage than the younger ones; this acreage averaged 112 acres for landlords between 60 and 69 years of age and only 20 for those who were less than 30 years old.

General.—On the average the tenants had been farming for 21 years, including about eight years spent as hired men either on the home or on other farms. Fifty-three per cent had started farming on the home farm, 29 per cent had begun as hired men and eight per cent as tenants; the remaining ten per cent had left industrial employment to begin farming.

Fifty-six per cent of the tenants visited intended to purchase a farm, 25 per cent expected to continue as tenants and the remaining 19 per cent had no definite plans; 88 per cent of those operating on a livestock-share basis intended to become farm owners.

SOME NOTES ON RETAIL AND FARM PRICES OF FOOD PRODUCTS

T. G. E. WOOLLAM

Has the decline in farm prices of recent years resulted in lower prices to the consumer? Frequently, attempts are made to answer this question by means of comparison of the food prices index with the farm prices index. This type of comparison may lead to some erroneous conclusions; for example, a comparison of the Canadian food price index with the farm price index would indicate that farm prices in mid-1954 were 20 per cent below 1951 prices whereas food prices had declined by only four per cent during the same period. As a large part of the food purchased by "consumers" originates on the farms it is necessary to look more closely at these indexes.

In relating the farm price index to the food price index, a few significant differences must be considered. The methods of "weighting" the items in the two indexes pose an immediate problem. For instance, grains and feeds account for about one-half of the total weights in the wholesale price index of Canadian farm products whereas in the food index, grain products represent just over one-tenth of the total weights. In the case of animal products the weights in both indexes are about equal although there are wide differences among individual items. About one-third of the weights in the food index are allotted to items such as coffee, tea, sugar, fruits and vegetables, which have little or no bearing on Canadian farm price indexes.

Western Canada grain is marketed through the Canadian Wheat Board which makes an "initial" payment for grain received and supplements this with additional "participation" payments as the grain is sold. Current farm

price indexes are subject to sharp revisions as these participation payments are announced and as a result, these current indexes are not comparable with earlier series.

Probably the simplest way to compare changes in farm prices with those at retail is by a comparison of the main groups. As an illustration, Table 1 shows changes in the retail food index and the component parts of this index which are related more specifically to Canadian agriculture.

The changes in farm prices by commodity groups may now be compared with those contained in Table 1 to indicate the relative movements of retail food and of farm prices. It is not to be expected that changes in farm prices will bring about proportional changes in retail prices. The cost of wheat in a loaf of bread or a box of cereal is only a very small part of the retail selling price whereas in the case of eggs the farmer may receive about three-fourths of what the consumer pays. Thus the effects of changes in farm prices on retail prices will depend to a large extent on the size of the marketing margin. Changes in indexes of retail commodity groups compared with changes in prices at the farm or terminal markets for the equivalent commodity group are summarized in Table 2.

A comparison of retail prices by commodity groups indicates that by mid-1954 changes in farm prices for dairy products and animal products since 1951, were generally reflected at the retail level. In the case of cereal products, the decline in wheat prices has been accompanied by an increase in retail prices. However, the value of the wheat in a loaf of bread, which is the major cereal product in the food index, accounts for only about 15 per cent of the retail selling price and the decline in wheat prices has been equivalent to about one cent on a 24-ounce loaf of bread.

Table 1.—Changes in the Retail Food Index, 1951 to Mid-1954 (1949=100)

	1951	1952	1953	Mid-1954
Food Index (total).....	117.0	116.8	112.6	112.0
Per cent change from 1951.....	—	— 0.2	— 3.8	— 4.3
Dairy Products.....	108.6	113.3	112.4	110.9
Per Cent change from 1951.....	—	+ 4.3	+ 3.5	+ 2.1
Cereal Products.....	113.0	117.4	119.3	122.5
Per cent change from 1951.....	—	+ 3.9	+ 5.6	+ 8.4
Meats, Fish and Poultry.....	127.9	115.5	108.2	106.2
Per cent change from 1951.....	—	— 9.7	— 15.4	— 17.0

Table 2.—Percentage Change in Prices at Farm and Retail, 1951 to Mid-1954.

	Percentage Change Compared with 1951		
	1952	1953	Mid-1954
Dairy Products			
Food Index.....	+ 4.3	+ 3.5	+ 2.1
Farm Index ^a	+ 3.2	+ 1.5	+ 1.3
Cereal Products			
Food Index.....	+ 3.9	+ 5.6	+ 8.4
Wheat (Fort William).....	+ 1.0	0	— 9.5
Animal Products			
Food Index.....	— 9.7	— 15.4	— 17.0
Farm Products Index ^b	— 17.6	— 21.7	— 20.7

^a Farm price. Ontario for dairy products weighted by food index weights.

^b Wholesale prices indexes of Canadian agricultural products.

THE ECONOMIC ANNALIST

A BIMONTHLY REVIEW OF AGRICULTURAL BUSINESS

G. P. BOUCHER, Editor

APRIL 1955

Vol. XXV, No. 2

CONTENTS

	Page
The Economic Situation.....	27
Some Economic Aspects of Farm Organization and Management on Dairy Farms of the Lower Fraser Valley, British Columbia, 1953.....C. H. Ferries	29
Federal Agricultural Programs Affecting Prices of Farm Products, March 1, 1954, to February 28, 1955.....Marjorie R. Cameron	32
The Blueberry Enterprise in Nova Scotia and New Brunswick...G. C. Retson and E. S. Eaton	36
Adjusting Cash Land Rents to Changes in Price Levels.....D. J. Packman	39
Cropping Practices in the Eastern Townships, Quebec.....L. R. Fortier and A. Gosselin	41
World Statistics.....	46
Ninth International Conference of Agricultural Economists.....	47
Publications of the Economics Division.....	48
Publications of the United Nations.....	48

MARKETING SERVICE, ECONOMICS DIVISION

J. F. BOOTH, Chief

Published by Authority of the Right Honourable James G. Gardiner
Minister of Agriculture

ANNUAL AND MONTHLY INDEX NUMBERS
WHOLESALE PRICES, FARM PRICES AND LIVING COST INDEXES

Year	Wholesale Prices 1935-1939 = 100				Farm Prices of Agricultural Products 1935-39 = 100 (e)	Commodities and Services used by Farmers 1935-39 = 100		Consumer Price Index (1949 = 100) (h)	Food Index (1949 = 100) (i)	Index of industrial production (1935-39 = 100) (j)
	(a) General Wholesale Index	(b) Farm Products	(c) Field Products	(d) Animal Products		(f) Equipment and Materials	(g) Composite Index			
1913.....	83.4					85.4		49.2	44.4	
1914.....	85.4					90.2	85.3	49.6	46.0	
1915.....	91.8					96.9	91.6	50.3	46.8	
1916.....	109.8					101.7	100.5	54.2	51.8	
1917.....	148.9					140.7	140.5	63.7	66.9	
1918.....	166.0					164.1	160.2	72.0	76.9	
1919.....	174.7					169.1	167.9	78.8	82.2	
1920.....	203.2					190.1	186.5	90.5	94.4	
1921.....	143.4					147.4	152.5	80.9	72.5	
1922.....	126.8					124.6	134.1	74.9	61.5	
1923.....	127.7					118.3	130.6	75.2	61.9	
1924.....	129.5					122.3	131.9	74.0	60.7	
1925.....	133.8					123.2	131.8	74.6	63.4	
1926.....	130.3	144.4	158.5	130.2		119.9	130.6	75.9	66.6	
1927.....	127.3	138.6	149.4	127.8		119.9	131.2	74.6	65.3	
1928.....	125.6	136.3	134.3	138.2		118.3	129.3	75.0	65.6	
1929.....	124.6	140.8	137.2	144.4		117.6	127.9	75.8	67.1	
1930.....	112.9	119.5	105.8	133.3		105.6	117.0	75.3	65.6	
1931.....	94.0	78.9	65.0	92.7		92.2	100.9	67.9	51.4	
1932.....	86.9	65.5	60.4	70.5		89.3	93.3	61.7	42.8	
1933.....	87.4	69.3	69.3	69.2		88.8	89.8	58.8	42.3	
1934.....	93.4	83.5	80.5	86.5		96.8	95.5	59.6	46.2	
1935.....	94.4	89.2	84.4	94.1	88.0	95.6	95.4	59.9	47.2	85.6
1936.....	96.7	97.9	102.2	93.7	96.9	98.7	98.1	61.1	43.8	94.6
1937.....	107.8	117.4	128.9	106.0	119.7	108.4	105.3	63.0	51.4	108.0
1938.....	102.0	102.9	100.9	104.8	105.0	101.7	101.7	63.7	51.7	102.0
1939.....	99.2	92.6	83.7	101.5	91.8	95.7	99.3	63.2	50.2	109.7
1940.....	108.0	96.1	85.4	106.7	96.8	101.8	106.8	65.7	52.6	131.4
1941.....	116.4	106.6	88.9	124.4	110.2	107.8	116.1	69.6	57.9	164.8
1942.....	123.0	127.1	109.7	144.6	133.1	119.2	131.6	72.9	63.4	195.7
1943.....	127.9	145.4	129.0	161.8	157.8	122.4	143.4	74.2	65.2	208.5
1944.....	130.6	155.3	144.5	166.1	172.4	126.0	148.0	74.6	65.5	212.4
1945.....	132.1	166.4	162.5	170.2	185.7	125.9	152.1	75.0	66.3	187.2
1946.....	138.9	179.5	177.9	181.2	204.1	128.0	157.0	77.5	70.0	171.9
1947.....	163.3	192.2	184.1	200.2	215.8	139.5	170.4	84.8	79.5	187.8
1948.....	193.4	232.1	200.6	263.7	255.8	173.1	197.4	97.0	97.5	196.3
1949.....	198.3	228.7	191.9	265.4	255.4	180.3	204.1	100.0	100.0	199.6
1950.....	211.2	236.7	191.9	281.4	260.8	189.9	210.4	102.9	102.6	211.5
1951.....	240.2	268.6	200.4	336.9	296.8	206.0	230.0	113.7	117.0	226.5
1952.....	226.0	250.2	223.0	277.5	274.4	215.8	243.1	116.5	116.8	232.9
1953.....	220.7	220.9	178.1	263.8	249.4	207.4	239.8	115.5	112.6	248.4
1954.....					232.1	203.3	235.9	116.2		
1954 Jan.....	219.8	212.9	159.4	266.3	237.9	204.0	231.0	115.7	111.6	229.1
1954 Feb.....	219.0	212.3	160.0	264.7	238.6			115.7	111.7	230.4
1954 Mar.....	218.6	210.2	158.3	262.0	233.0			115.5	110.7	236.8
1954 Apr.....	217.9	209.0	157.6	260.4	231.3	204.1	238.0	115.6	110.4	242.4
1954 May.....	218.2	213.1	158.2	268.0	233.3			115.5	110.2	245.6
1954 June.....	217.8	213.1	158.9	267.3	234.9			116.1	112.0	252.5
1954 July.....	217.4	217.8	173.6	262.1	234.5			116.2	112.1	238.5
1954 August.....	215.8	207.9	167.6	248.2	231.2	201.9	238.7	117.0	114.4	246.7
1954 Sept.....	215.3	204.1	162.6	245.5	227.5			116.8	113.8	253.7
1954 Oct.....	214.3	201.1	161.8	240.5	220.0			116.8	113.8	256.0
1954 Nov.....	214.8	203.8	164.0	243.6	219.3			116.8	113.4	254.4
1954 Dec.....	215.3	204.7	163.5	245.9	219.7			116.6	112.6	240.6
1955 Jan.....	215.7	206.5	164.5	248.4	221.2	205.8	231.7	116.4	112.1	
1955 Feb.....	217.4	206.1	166.4	245.8	222.1			116.3	115.5	238.5

(a) Canada. Dominion Bureau of Statistics, Labour and Prices Division. *Prices and Price Indexes* Ottawa, Monthly

(b) Ibid. (a). Wholesale prices of products of Canadian farms.

(c) Ibid. (a). Wholesale prices of grains, hay, tobacco and potatoes.

(d) Ibid. (a). Wholesale prices of animals and animal products.

(e) Canada. Dominion Bureau of Statistics, Agriculture Division. *Index Numbers of Farm Prices of Agricultural Products*. Ottawa, Monthly.

(f) Canada. Dominion Bureau of Statistics, Labour and Prices Division. *Price Index Numbers of Commodities and Services Used by Farmers*. Ottawa, Jan., Apr. and Aug. Includes prices of commodities in 8 groups including farm implements, building materials, gasoline, oil and greases, feed, fertilizer, binder twine, seed and hardware.

(g) Ibid. (f.) Includes the 8 commodities indicated above plus tax rates, interest rates and farm wage rates.

(h) Canada. Dominion Bureau of Statistics, Labour and Prices Division. *Price Movements*. Ottawa, Monthly.

(i) Canada. Dominion Bureau of Statistics, Labour and Prices Division. *Prices and Price Indexes*. Ottawa, Monthly.

(j) Canada. Dominion Bureau of Statistics. *Canadian Statistical Review*. Ottawa, Monthly.

THE ECONOMIC SITUATION

Private and Public Investment Outlays.

—According to a report on "Private and Public Investment in Canada—Outlook 1955" tabled in the House of Commons by the Minister of Trade and Commerce on February 24, projected private and public investment outlays for new construction, machinery and equipment will be about six per cent greater in 1955 than in 1954. Anticipated capital expenditures will amount to \$5.8 billion, compared with \$5.5 billion in 1954. These estimates are based on a survey of about 16,000 business establishments across Canada and on surveys of proposed expenditures by governments, institutions and private house builders.

The larger capital expenditure program is the result of increased activity in a wide range of industries. The mining industry will witness the most rapid increase; its planned outlays are at a rate 24 per cent above those of 1954. Institutional building is expected to increase by 19 per cent and expenditures for new housing, which reached record heights in 1954, will increase by another ten per cent in 1955. The large carry-over of uncompleted houses will be an important factor in sustaining building activity. Spending by the trade, finance and commercial service groups is expected to be a little higher but spending by utilities and agriculture is likely to remain at about the 1954 levels.

Investment plans of the manufacturing industries call for only a moderate increase in spending. Nevertheless this increase will be a reversal of the declining trend which began in 1952, and will thus be one of the most encouraging features of the investment program for 1955.

Trade Prospects.—In an address to the Canadian Council of the International Chamber of Commerce, on March 2, the Minister of Trade and Commerce said:

Trade prospects for 1955 appear bright, with both exports and imports expected to be above their 1954 levels. The two major factors that may determine the extent of the anticipated increase in export sales are the size and quality of the 1955 crop, and the level of ocean shipping rates. The outlook for exports of wheat and grain is considerably more favourable than it was a year ago, because of the smaller harvests abroad and the diminished stocks held in the United Kingdom . . . demand for most of the

things we are exporting remains firm. The economies of most of our European customers continue to expand, and the United States is recovering from its mild recession. World demand continues to be strong for forest products, base metals, our staple agricultural and fish products, and chemicals. Foreign orders already booked will assure higher exports of basic and finished steel products in 1955. Some increase in imports also seems to be indicated. Canadian economic activity in general is expected to be somewhat higher, business inventories need replenishing, and imports of certain types of capital goods may increase by reason of proposed expansion programs in the mining, metallurgical and utility industries.

Exports.—Canada's domestic exports were markedly higher in January 1955 than in January 1954. Major gains were recorded in shipments to the United Kingdom and the United States. Exports were higher than a year earlier to the group of Commonwealth countries and to Latin America and Europe but lower to the remaining foreign countries.

There were large gains in wood and paper products, non-ferrous metals and chemical products, and smaller gains in non-metallic minerals, agricultural and vegetable products and fibres and textiles. These gains heavily outweighed the declines in iron products, animals and animal products and miscellaneous commodities groups.

Total exports were valued at \$310.1 million compared with \$265.4 million in January last year. All of the increase occurred in domestic exports, which increased from \$260.7 million to \$305.7 million; foreign exports declined from \$4.7 million to \$4.4 million. The volume of domestic exports in January 1955 was higher than in any other corresponding month during the postwar period.

The biggest dollar increase in domestic exports was in shipments to the United Kingdom; these shipments rose in value from \$37.9 million to \$62.7 million. Exports to the U.K. were larger in value for all commodity groups except the iron and miscellaneous commodities groups; the major gains were in agricultural and vegetable products, wood and paper and non-ferrous metals groups.

Domestic exports to other Commonwealth countries rose from \$12 million to \$16.5 million, as the result of substan-

tial increases in exports to the Africa and Oceania groups and only small decreases in exports to the West Indies and the Asia groups. Marked gains were recorded for shipments to Australia, New Zealand and the Union of South Africa, and small gains for shipments to India, Ceylon and Jamaica.

Shipments to the United States rose from \$157 million to \$179.5 million, those to European countries from \$22.6 million to \$25 million, and shipments to Latin America from \$10.2 million to \$12.5 million.

Industrial Production.—Canada's composite index of industrial production rose from 235.5 in December 1953 to 240.0 in December 1954. The index averaged 244.8 for all 12 months of 1954, compared with 248.4 for 1953.

The manufacturing component of the index dropped from 247.4 in December 1953 to 243.2 in December 1954; the index of mineral output advanced from 176 to 206.7 and the index of electricity and gas production from 248 to 282.2.

The index of non-durable manufactures rose from 210.8 in December 1953 to 212.7 in December a year later. Among the industries in this group, the index for textile production (excluding clothing) rose from 151.9 to 178.1 but the index of output for all other lines changed very little. Tobacco products, rubber products, and printing and publishing made small gains, production of foods and beverages and paper products was almost unchanged, and clothing, petroleum and coal, and chemical products recorded small declines.

The index of durable manufactures dropped from 304.6 in December 1953 to 290.9 in December last year, the transportation equipment index from 403.3 to 321.7 and the index for iron and steel products from 263.7 to 229.0. The non-ferrous metals index advanced from 229.2 to 264.2 and wood products, electrical apparatus and supplies recorded smaller gains.

The "Bank Rate."—The Bank of Canada announced on February 14 a reduction in "Bank Rate" to 1.5 per cent from the level of two per cent established in October 1950.

A statement released by the Bank said:

The Bank Rate is the minimum rate at which the central bank will lend for short periods to the chartered banks and the money market on the security of Treasury Bills and short-term Government bonds. Yields on

these securities have declined materially over the past year and a half and Bank Rate at the old level had ceased to bear a reasonable relationship to other short-term interest rates.

In the past, Bank Rate has been changed infrequently in Canada and little use has been made of the Bank's facilities. The growth in the breadth and scale of activity in the short-term money market over the past two years has made it desirable that the Bank Rate be made more flexible and bear a closer (though not fixed) relation to other short-term interest rates. The present adjustment will help to make Bank Rate a more significant factor in the money market and facilitate its more flexible use in the future as circumstances may require.

While the structure of short-term interest rates, including Bank Rate, provides an index of monetary conditions, it does not follow that every change in Bank Rate or in the level of other short rates necessarily indicates a change in general economic conditions.

Butter.—In a statement made in the House of Commons on January 28 the Minister of Agriculture outlined a plan for the sale of butter at a reduced price to hospitals, orphanages, and other institutions. Butter will be offered to all Canadian institutions on the list published by the Department of National Health and Welfare for the purposes of the Excise Act and the Excise Tax Act.

The price reduction will be about 21 cents per pound below the price which institutions had been paying to their suppliers, for the same grade of butter. Institutions will secure their butter through their trade channels and the suppliers will be reimbursed by the Agricultural Prices Support Board for differences between prices to institutions and market prices.

In a speech made in Edmonton the minister had said that "We have over 20 million more pounds in storage at present than we think necessary". It was to dispose of as much of this amount as possible that the new sales program was instituted. It will not, of course, become a permanent type of program.

Consumer Prices.—The consumer price index moved from 116.4 at the beginning of January to 116.3 on February 1. Group indexes were remarkably stable, the foods group being the only one to register a change of more than 0.1 point.

SOME ECONOMIC ASPECTS OF FARM ORGANIZATION AND MANAGEMENT ON DAIRY FARMS OF THE LOWER FRASER VALLEY, BRITISH COLUMBIA, 1953

C. H. FERRIES

The purchase, equipment and operation of a dairy farm in the Lower Fraser Valley of British Columbia call for a large capital investment and heavy annual expenses. Details on the size of this investment, and on costs and returns were obtained from a study of 162 dairy farm business records for the year 1953.

Capital Investment.—The total investment in the farm business ranged from \$6,300 to \$124,000 and averaged \$39,980 per farm. On 13 per cent of the farms it averaged less than \$20,000 per farm; on 25 per cent, from \$20,000 to \$40,000; and on ten per cent, over \$70,000 per farm.

Land and buildings represented about two-thirds of the value of the total investment. Improved land was valued at \$330 per acre, on the average, and unimproved land at \$139 per acre.

Table 1.—Distribution of Average Farm Capital, 157^a Lower Fraser Valley Dairy Farms, 1953

Item	Average per Farm	
	dollars	per cent
Land:		
Improved.....	16,315	40.8
Unimproved.....	757	1.9
Buildings.....	9,846	24.6
Livestock.....	6,563	16.4
Machinery and equipment:		
Dairy.....	364	0.9
General ^b	2,261	5.7
Cars, trucks and tractors.....	2,666	6.7
Feed and supplies.....	1,208	3.0
Total.....	39,980	100.0

^a Five rented farms were excluded.

^b This item included irrigation equipment found on 48 of the farms.

Land Utilization.—Farm size ranged from nine to 300 acres and the average was 67 acres, 57 of which were owned and ten rented. Improved and unimproved land also averaged 57 and ten acres respectively, but the improved land was not all owned nor the unimproved land all rented.

Ninety per cent of the improved land was in pasture, hay, or grain and silage. The main grain crop was oats, which were fed green or threshed, depending on the weather.

Buildings.—In general, the buildings were in good repair. The average investment in buildings was \$9,846; 39 per cent in the dwelling and 61 per cent in other farm buildings which usually included a dairy barn, a milk house, an upright silo, a chicken house, a machine shed and a garage.

Machinery and Equipment.—Most of the farms had the following implements: side delivery rake, power mower, tractor plow, discs, drag-harrow, cultivator, manure spreader and a wagon. Many farms also had water pumping units, electric fences and farm tools to maintain and repair buildings and machinery.

Lower Fraser Valley farms are becoming more mechanized; 93 per cent of the farms had milking machines, 92 per cent had tractors and 79 per cent had cars.

Livestock.—The dairy herd averaged 22 cows, ten heifers (one and two years old), and six heifer calves, and the size of herd ranged from four cows to a total of 126 animals (86 cows, 18 heifers one and two years old, and 22 heifer calves). Eighty-nine farms had herd sires, 84 used artificial insemination facilities and some used both methods of insemination.

The distribution of dairy herds according to breed was as follows: 32, Guernsey; 27, Jersey; 27, Holstein; four, Ayrshire; 23, Guernsey and Holstein; nine, Guernsey and Jersey; six, Holstein and Jersey; three Ayrshire and Jersey; and 31 mixed herds of three or more breeds. Most of the herds consisted of

Table 2.—Distribution of Total Current Expenses, 162 Lower Fraser Valley Dairy Farms, 1953

Item	Average per Farm	
	dollars	per cent
Taxes.....	359	6.8
Fire insurance.....	55	1.0
Custom work.....	147	2.8
Electricity.....	63	1.2
Telephone.....	18	.3
Rent of land.....	171	3.2
Land improvement.....	6	.1
Seed.....	115	2.2
Feed.....	2,031	38.4
Fertilizer.....	240	4.5
Other livestock expenses ^a	585	11.0
Labor.....	718	13.6
Operating or car.....	204	3.8
Building repairs.....	27	.5
Operation of truck.....	114	2.2
Operation of tractor.....	244	4.6
Repairs to general equipment.....	91	1.7
Short term interest.....	10	.2
Miscellaneous.....	92	1.9
Total.....	5,290	100.0

^a Other livestock expenses include veterinary fees and medicine, barn spray material and lime, dairy supplies, cow testing and R.O.P. fees, milk can rental, freight on milk, breeding fees, and straw or shavings for bedding.

grade animals, but 15 farmers had only purebred animals, and 44 others had some purebred stock. Over 62 per cent of the 112 farms reporting poultry had 50 or fewer birds.

Less than 20 per cent of the farms had hogs, steers or sheep and only 24 per cent had horses.

Farm Receipts.—Total cash receipts, excluding off-farm work, averaged \$9,584 per farm and ranged from \$1,200 to \$38,100. Crops provided 9.4 per cent of these receipts; livestock, 9.4 per cent¹; milk, 75.5 per cent; other farm products, 3.9 per cent²; custom work, 1.3 per cent; and miscellaneous 0.5 per cent³.

¹ Income from the sale of livestock includes returns from cattle, hogs, sheep and poultry.

² Income from the sale of other farm products includes receipts from eggs, wool, hides, logs, wood, and breeding fees.

³ Miscellaneous income includes returns from rent of machinery, sales of manure, milk received as rent, and compensation from pipeline companies for damage to crops.

Capital receipts averaged \$527 per farm and came mostly from the sale of farm machinery, cars, or tractors. Increases in inventory averaged \$1,426 per farm.

Farm Expenses.—Total current expenses averaged \$5,290 per farm, and ranged from \$785 to \$23,479. Feed represented 38·4 per cent; labour, 13·6 per cent; other livestock expenses, 11·0 per cent; and operation of car, truck and tractor, 10·6 per cent of the total operating expenses (Table 2).

Capital expenditures averaged \$2,290 per farm and were incurred mainly for the purchase of farm machinery, cars, or tractors. These expenditures constituted an increase in the value of the farm business which was reflected in the inventory increases.

Table 3.—Financial Summary, 162 Lower Fraser Valley Dairy Farms, 1953

Item	Average per Farm	
	dollars	
Receipts:		
Cash receipts.....	9,584	
Capital receipts.....	527	
Net inventory increase.....	1,426	
Total.....		11,537
Expenses:		
Current expenses.....	5,290	
Capital expenses.....	2,290	
Total.....		7,580
Family farm income.....		3,957
Less interest on investment at 5 per cent.....		1,959
Family labor income.....		1,998
Less unpaid family labor.....		380
Operator's labor income.....		1,618

Financial Summary.—After payment of all cash expenses, provision for depreciation, and adjustments for changes in inventory, the average family farm income totalled \$3,957 (Table 3). An average of \$1,618 remained to the farm operator for his labor and management after deduction of an allowance of five per cent as a return on the average farm investment, and of an allowance for wages to unpaid members of the family who worked on the farm. Additional returns to the farmer for his work included the use of a house and of products such as wood, vegetables, milk, eggs, meat, and fruit obtained from the farm and consumed by the household. The value of these perquisites averaged \$774 per farm.

Operator's labor income ranged from minus \$3,543 to \$11,004. For most of the operators this income varied between \$1,000 and \$1,999; 21 had \$4,000 or more and 38 had negative labor incomes.

FARM LAND VALUE

After a consistent increase since 1940 the average value of occupied farm land, including the value of buildings and unimproved land, in Canada, declined slightly in 1954. From an average of \$48 per acre in 1952 it rose to \$51 in 1953 and dropped to \$50 in 1954.

This decline was the result of lower average values in New Brunswick, Prince Edward Island and the Prairie Provinces. Higher values were recorded in Quebec, Ontario and British Columbia. There was no change in Nova Scotia.

**FEDERAL AGRICULTURAL PROGRAMS AFFECTING PRICES OF FARM
PRODUCTS, MARCH 1, 1954 TO FEBRUARY 28, 1955¹**

MARJORIE R. CAMERON

Agricultural Prices Support Act, 1944, as amended.

Hogs and pork products

*Authority:*² P.C. 4141, September 24, 1952.

Support price: The equivalent of \$23.00 per 100 pounds warm dressed weight for Grade A carcasses at public stockyards, Toronto and Montreal with appropriate price differentials at principal public stockyards throughout Canada.

In effect: From January 1, 1953.

The Board has the authority to buy hogs and pork "in whatever form is considered preferable" at prices equivalent to the support prices for Grade A carcasses. However, between March 1, 1954 and February 28, 1955 prices of pork have been above the support level and no offerings have been made to the Board.

Butter

*Authority:*² P.C. 1953-470, March 26.

Support price: 58¢ per lb. first grade creamery, basis Halifax, St. John, Montreal and Toronto, and 57¢ Vancouver.

In effect: May 1, 1953 to April 30, 1955.

Authority: P.C. 1955-404, March 18.

Support price: 58¢ per lb. first grade creamery, basis Halifax, St. John, Montreal and Toronto, and 57¢ Vancouver.

In effect: May 1, 1955 to April 30, 1956.

Between May 3 and June 14, 1954 the Board made a slight reduction in the selling price of its 1953 butter holdings in order to sell these stocks and replace them with 1954 make butter bought at the support price. On January 28, 1955 the Minister of Agriculture announced that butter held by the Board would be sold for about 21¢ per lb. less than the current selling price, to approved Canadian institutions which apply for it. At the end of February 1955 Board holdings of 1954 make butter totaled about 59 million pounds.

Eggs

Authority: P. C. 1955-161, February 9.

Support price: 38¢ per dozen for Grade A Large eggs, with appropriate price differentials for other grades of eggs and egg products, plus an allowance to defray storage costs.

In effect: 1955.

This program is a continuation of the one in effect during 1954. Stocks on hand at the end of February, 1955 consisted of about 3 million dozen shell eggs, most of which have been converted into melange.

Apples

Authority: P.C. 1954-1541, October 6.

Support price: 90¢ per bushel (45 lb.) of sound orchard run apples produced in Nova Scotia during 1954 and suitable for processing, delivered at a designated warehouse, storage or processing plant.

In effect: 1954 crop.

¹For information on these programs from January 1, 1950 to February 28, 1954, please refer to the October 1950 and April 1952, 1953 and 1954 issues of *The Economic Annalist*.

²"P.C." designates order in council number. From 1953 figures indicating the year of issuance precede the actual order in council number.

Support for this crop was provided because of extensive damage to Nova Scotia orchards by the hurricane which occurred in mid-September 1954. By the end of February 1955, stocks of the processed products had all been sold.

The Canadian Wheat Board Act, 1935, as amended.

Wheat

Authority: P.C. 1953-1045, July 2; P.C. 1953-1254, Aug. 5; P.C. 1954-875, June 10; P.C. 1954-1068, July 13; P.C. 1954-1663, Nov. 3.

Price to producer: Initial price per bushel basis No. 1 Northern in store Ft. William-Port Arthur or Vancouver: \$1.40; Nov. 3/54 increased by 10¢ for all grades except Garnet, Soft White Spring, Alberta Winter and Alberta Red Winter wheat; final payment.

In effect: 1953-54 pool (Aug. 1, 1953-July 31, 1954).

Authority: P.C. 1954-1067, July 13; P.C. 1954-2070, Dec. 31.

Price to producer: Initial price per bushel basis No. 1 Northern in store Ft. William-Port Arthur or Vancouver; \$1.40.

In effect: 1954-55 pool (August 1, 1954-July 31, 1955).

Effective February 16, 1954 the Board began to quote separate selling prices for Western Wheat: 1) in store Pacific Coast ports; 2) in store Ft. William-Port Arthur; 3) in store Port Churchill; to provide Canadian wheat in a competitive position regardless of the port of shipment. Accordingly, on this date the Board reduced the selling prices of wheat at the Lakehead by 7¢ per bushel below those at Pacific Coast ports and quoted prices for wheat in store Port Churchill at 9¢ per bushel above the Lakehead prices. During the month of June the differential between prices at the Lakehead and at Pacific Coast ports narrowed to 6¢ per bushel with Churchill prices still 9¢ above those at the Lakehead. By March 1955 prices at Vancouver were 1¢ below those at the Lakehead because of increased ocean freight rates.

On June 7, 1954 the Board reduced the selling prices for No. 1 Northern Wheat by 10½ cents a bushel at Ft. William-Port Arthur and Vancouver; price reductions for other grades ranged from 6½ to 10½ cents a bushel. These reductions followed the June 4 United States Department of Agriculture announcement that the U.S. wheat export subsidy would be increased, thus reducing the price by about ten cents a bushel to importers of this wheat.

Changes in the rate of freight assistance on shipments of western grains for feed became effective on February 1, 1955 under authority of P.C. 1955-138, January 26. It reduced the basic rate from \$6.00 to \$4.50 per ton on all shipments into Ontario and most of Quebec but made no change in the basic rate on shipments into the far eastern part of Quebec and into the Maritime Provinces and Newfoundland. It also reduced by \$5.00 per ton the rates on all shipments into British Columbia, to place these rates on the same level as those in the Maritimes and far eastern Quebec.

Canada's guaranteed annual quantities of export wheat under the I.W.A., as adjusted, are 152.3 million bushels.

Oats

Authority: P.C. 1953-1045, July 2; P.C. 1953-1255, Aug. 5; P.C. 1954-955, June 24; P.C. 1954-1662, Nov. 3; pool transfer—P.C. 1954-1661, Nov. 3.

Price to producer: Initial price per bushel basis No. 2 C.W. in store Ft. William-Port Arthur: 65¢; final payment, 5.462¢; total return, 70.462¢.

In effect: 1953-54 pool (Aug. 1, 1953-July 31, 1954).

<i>Authority:</i>	P.C. 1954-1067, July 13; P.C. 1954-2071, Dec. 31; P.C. 1955-351, March 18.
<i>Price to producer:</i>	<i>Initial</i> price per bushel, basis No. 2 C.W. in store Ft. William-Port Arthur: 65¢; March 21/55 increased by 7¢.
<i>In effect:</i>	1954-55 pool (Aug. 1, 1954-July 31, 1955).

Parts III and IV of The Canadian Wheat Board Act were extended to oats for the crop year 1954-55 by P.C. 1954-1067. This authorizes the Board to regulate the marketing of oats in interprovincial and export trade and designates this crop year as a pool period.

Effective October 15, 1954 the 1953-54 oats pool was closed and 5.72 million bushels were transferred to the 1954-55 crop account. Distribution of the surplus from the pool was authorized November 3, 1954. The final payment and total return shown above are net figures, after deduction of expenses and the Prairie Farm Assistance one per cent levy.

Canada agreed to limit shipments of oats to the United States to 23 million bushels (32 lb. oats) between December 10, 1953 and September 30, 1954 under an arrangement with the United States Government.

Barley

<i>Authority:</i>	P.C. 1953-1045, July 2; P.C. 1953-1255, Aug. 5; P.C. 1954-955, June 24; P.C. 1954-1576, Oct. 19; pool transfer—P.C. 1954-1575, Oct. 19.
<i>Price to producer:</i>	<i>Initial</i> price per bushel, basis No. 3 C.W. Six-Row in store Ft. William-Port Arthur: 96¢; final payment, 9.885¢; total return, \$1.05885.
<i>In effect:</i>	1953-54 pool (Aug. 1, 1953-July 31, 1954).

<i>Authority:</i>	P.C. 1954-1067, July 13; P.C. 1954-2071, Dec. 31; P.C. 1955-348, March 12.
<i>Price to producer:</i>	<i>Initial</i> price per bushel, basis No. 3 C.W. Six-Row in store Ft. William-Port Arthur: 96¢; March 14/55 increased by 10¢.
<i>In effect:</i>	1954-55 pool (Aug. 1, 1954-July 31, 1955).

Parts III and IV of the Canadian Wheat Board Act were extended to barley for the crop year 1954-55 by P.C. 1954-1067. This authorizes the Board to regulate the marketing of oats in interprovincial and export trade and designates this crop year as a pool period. The 21.2 million bushels of barley remaining in the pool when it was closed on September 30, 1954 were transferred to the 1954-55 pool and distribution of the surplus was authorized on October 19, 1954.

For the year ending September 30, 1954 the United States limited barley imports from Canada to 27.225 million bushels; Canada agreed to limit *feed* barley exports to 3.5 million bushels of this total. The balance of the Canadian quota was to consist of malting barley, barley malt and other barley products.

Agricultural Products Co-operative Marketing Act, 1939, as amended.

Under this Act a selling agency may sign an agreement with the Minister of Agriculture for marketing an agricultural commodity on a co-operative plan during a specified period. The agreement authorizes the selling agency to give producers an initial payment on their deliveries of the commodity to be marketed. When marketing has been completed the Minister agrees that if the average wholesale price of the commodity marketed by the selling agency is less than the initial payment, plus the actual handling costs—which must not exceed the maximum stated in the agreement—the selling agency will receive the difference between the initial payment plus costs, and the average wholesale price.

Cheese

- Authority:* P.C. 1954-694, May 6; P.C. 1954-854, June 10; P.C. 1955-30, Jan. 4 (Ontario).
- Initial payment:* 24¢, 23¢ and 22¢ per pound for first, second and third grades, respectively, of Ontario cheddar, f.o.b. cheese factory, plus a maximum allowance to defray selling costs. These prices were about 80 per cent of the average factory prices during the previous three years.
- In effect:* 1954 production; extended to include production from January 1 to April 30, 1955.

The June and January orders in council authorized the Ontario Cheese Producers Association Limited to make a payment to producers of up to 4¢, 3½¢ and 3¢ per pound for first, second and third grade cheddar cheese respectively, after the initial payment, provided that it did not increase the liability of the federal government. To meet the cost of this payment a further amount was guaranteed by the Ontario Government and the Ontario Cheese Producers Marketing Board so that the cheese factories would receive 28¢ per pound for first grade cheese f.o.b. factory and 1½¢ per pound differentials on second and third grades respectively for cheese marketed by the Association Limited.

Turkeys

- Authority:* P.C. 1954-1690, Nov. 9 (Quebec).
- Initial payment:* Approximately 32 per cent of the average price paid producers in the last three years.
- In effect:* For turkeys produced in 1954 in specified regions of Quebec and delivered to the processors between October 4 and December 31, 1954.

As in the two previous agreements, turkeys were marketed through Pool 1 if the dressed weight was under 18 pounds and through Pool 2 if they weighed 18 pounds or more. The agreement specified: (1) appropriate price differentials; (2) that separate sales accounts be kept for each of the four grades in each pool; and (3) that all dressed turkeys in pool 1 should be sold by February 28, 1955 and in pool 2, by June 30, 1955. Maximum deliveries to the processor allowed under the agreement were 500,000 pounds.

Apples for processing

- Authority:* P.C. 1954-1162, July 28. (Quebec.)
- Initial payment:* Approximately 31 per cent of the average price paid producers in the last three years, for apples produced in 1954 in the fruit growing districts of Quebec and suitable for processing and sale as apple juice, apple sauce, apple pulp and apple jelly.
- In effect:* 1954 crop delivered for processing after August 15, 1954.

This agreement is similar to those in effect for the 1952 and 1953 crops and again provides that at least 90 per cent of all apple sauce and apple juice produced must grade Choice quality or better. All products processed under the agreement must be marketed by August 31, 1955.

Apples for fresh consumption

- Authority:* P.C. 1954-1350, Sept. 17. (Quebec.)
- Initial payment:* Approximately 35 per cent of the average producer price in the Montreal area in the previous three years for Fancy or better grades of three specified varieties of apples.
- In effect:* 1954 crop deliveries to the co-operative on or before October 31, 1954 for marketing by May 31, 1955.

As in 1953, the apples were marketed through three pools: (1) McIntosh red; (2) Fameuse; and (3) Cortland, and a separate sales account kept for each pool.

Apricots, prunes and peaches

Authority: P.C. 1954-1163, July 28 (British Columbia).
Initial payments: The total maximum guarantees (initial payments plus allowances for processing, carrying and selling costs) were:
 apricots—about 50% } of the average producer
 prunes —about 35% } prices during the pre-
 peaches—about 50% } vious three years.

In effect: For the 1954 crop until March 31, 1955.

The three agreements—one each for apricots, prunes and peaches—signed by the Minister of Agriculture and the selling agency under authority of this order in council, are similar to those in effect for the 1953 crops. The agreements specify pools and initial payments for different grades and varieties of these fruits and maximum handling costs for fruit sold for fresh consumption and for fruit to be processed.

Forage crop seeds

Authority: P.C. 1954-1241, Aug. 25 (Saskatchewan); P.C. 1954-1348, Sept. 17 and P.C. 1954-1349, Sept. 17 (Alberta).
Initial payments: Approximately 26 per cent of the average returns to producers during the previous three years for like grades and qualities.
In effect: 1954 crop (1954-55 agreements).

The maximum allowance to defray processing, carrying and selling costs of the 1954 crops was increased over that in previous agreements by about $\frac{1}{2}$ ¢ per pound delivered weight basis for all grades of forage crop seeds. The Saskatchewan agreement included the marketing of forage crop seeds of Altaswede red clover, alsike clover, sweet clover, brome grass, crested wheat grass, timothy, slender wheat grass, meadow fescue, creeping red fescue and Russian wild rye. The 1954 Alberta seed crops being marketed under agreement are brome grass, alsike, alfalfa and timothy. Final delivery dates for all seeds were December 15, 1954 under the Saskatchewan agreement and January 15, 1955 under that for Alberta.

THE BLUEBERRY ENTERPRISE IN NOVA SCOTIA AND NEW BRUNSWICK

G. C. RETSON and E. S. EATON

In Nova Scotia and New Brunswick blueberries have long been harvested for home consumption, but have attained importance as a commercial crop only during the last 20 years. The blueberry acreage has expanded continuously and considerably but the crop output has varied widely from year to year. During the 1948-52 period annual output was much larger in New Brunswick than in Nova Scotia. In 1953, however, output was slightly larger in Nova Scotia than in New Brunswick, and in 1954 the Nova Scotia output was about 1.5 times the total for New Brunswick. Prices received for blueberries were much higher in Nova Scotia than in New Brunswick during the 1948-51 period. The price gap has narrowed considerably during the last three years. (Table 1.)

Table 1.—Blueberry Production, Prices and Value, Nova Scotia and New Brunswick, 1948-54

Year	Production		Prices		Value	
	Nova Scotia	New Brunswick	Nova Scotia	New Brunswick	Nova Scotia	New Brunswick
	— 000 lb. —		— cents per lb. —		— 000 dollars —	
1948.....	935	4,000	26	10	262	400
1949.....	766	5,000	26	9	214	450
1950.....	940	1,500	24	12	225	180
1951.....	1,046	3,500	24	10	251	350
1952.....	1,672	4,000	15	11	251	440
1953.....	1,125	1,279	13·5	9	152	122
1954.....	5,126	3,500	12	11	615	385

In these two provinces commercial production is centered in Cumberland County (N.S.) and Charlotte County (N.B.). The crop is grown on run-out farm land, a type of land which used to provide low returns from the production of ordinary farm crops but which now brings in returns as high and sometimes higher than those secured on the best farm land in the provinces of Nova Scotia and New Brunswick. These high returns have stimulated interest in the crop itself and in purchases of land suitable for its production.

Current data on the blueberry enterprise were secured by means of an economic study conducted by the Economics Division. Records collected from 19 growers in Charlotte and Cumberland counties cover receipts and expenses for the 1954 blueberry crop and provide other information on this type of enterprise.

Yields, Receipts and Expenses.—The average holding included 28·5 acres; blueberries were picked on 17·5 of these acres in 1954 and the other 11 acres were burned over to insure a good crop the following year. Growers sold an average of 516 pounds of fruit per acre of blueberry land. Receipts from sales of blueberries averaged \$64 per acre, or \$104 per acre on which blueberries were actually harvested.

Table 2.—Average Receipts and Expenses per Acre, 19 Blueberry Enterprises, Nova Scotia and New Brunswick, 1954

	— dollars per acre —
Receipts—	
Blueberry sales.....	63·79
Expenses—	
Use of land.....	9·18
Use of buildings and equipment.....	3·79
Burning materials.....	2·57
Dust.....	0·44
Contract picking.....	15·77
Other.....	0·29
Total Expenses.....	32·04
Labor returns.....	31·75
Hours of labor.....	8·9
Labor returns per hour.....	3·57

Returns varied from farm to farm according to yields per acre; these yields averaged 909 pounds and ranged from 74 to 2,272 pounds per harvested acre. Growers stated that yields of 1,500 to 2,000 pounds per acre could be expected from land in full production. One grower obtained a yield of 6,050 pounds per acre in 1952 from a measured acre of land in one of his fields. The high yield coincided with high prices and the grower secured receipts of over \$1,000 from this one acre of land.

Total expenses, including some non-cash as well as cash items of expenses, averaged \$32 per acre. Land costs included taxes paid on the land and a charge of four per cent on the investment in blueberry land.

Land Values.—Until recent years blueberry barren was generally considered as one of the least valuable types of farm land. In many areas its appraised value would not exceed \$5 per acre. With the development of commercial blueberry production, however, some of this land has become the highest-priced crop land in the Maritime Provinces.

In Cumberland County, where growers had been engaged in commercial production for only about seven years, land values ranged from \$16 to \$500 and averaged \$120 per acre. Some of this land was just coming into production and there was considerable variation in the blueberry cover.

In Charlotte County, where blueberries had been produced commercially for 21 years, a frequent comment was that good blueberry land was worth \$1,000 per acre. The grower often added that he was not prepared to part with his land even at this price. The most conservative estimate was that average blueberry land was worth from \$200 to \$300 per acre and that good blueberry land should be valued at not less than \$500 per acre.

Buildings and Equipment.—Buildings for the blueberry enterprise usually consist simply of a shed where berries are cleaned and packed and equipment stored. The main items of equipment included cleaners, dusters, picking rakes, brush cutting and fire fighting equipment. The value of this equipment averaged \$164 per farm. In some cases equipment was owned on a share basis. Use of equipment included a charge for use of tractor, truck, or car when used on blueberry operations.

Burning Materials.—Growers preferred straw or marsh hay as a fire carrying material. Where these were not available, upland hay or oil was used. Hay or straw was spread on land with insufficient natural cover to insure a complete burn. As none of the farms owned power burners oil was used mainly for starting the burn, back burning fire breaks, or touching up spots that were missed in the over-all burn.

Growers in Cumberland County usually burned their land every other year. In Charlotte County the general practice was to pick two crops before burning. Some growers based their program on the size of the first year's crop. Where a heavy crop was secured the land was burned the following year. With a light yield the land was left in crop for two years. Growers noted that frequency of burn was a factor in securing pickers since there was a preference for working on new burn.

Dust.—All growers reported one to three applications of 50-10-40 arsenical dust at a rate of five pounds per acre. Many growers reported freedom from blueberry maggot and looked on their dust program mainly as a preventive measure.

Picking.—Picking was largely done by hired workers who were paid on a piece work basis. Picking costs ranged from \$1.00 to \$1.50 per bushel; the lower rates were paid for picking on new burn. All harvesting was done with rakes. Growers estimated that the average picker would harvest from five to six bushels of fruit per day. Good pickers would gather twice this quantity.

Other Expenses.—Other items of expense included twine for marking picking lanes, trespass signs, and rental of fire fighting and other equipment. There was no charge for containers as these were provided by buyers who also picked up the fruit at the farm.

Labor.—Aside from picking, most of the labor on the blueberry enterprise was provided by the operator or his family. Some additional help was hired at harvest time and there was an exchange of labor for burning. Aside from picking, total labor on blueberries averaged 8.9 hours per acre of which 3.9 hours was spent on supervising picking and on cleaning and packing berries. Other major chores were cutting brush and spreading straw.

Outlook.—Demand for blueberries in recent years has been very strong. The fruit stands up well in processing and is particularly in demand for pies. Processors claim that the potential market for blueberries in many areas of the United States and Canada has not yet been tapped. In both these countries, however, there has been a sharp increase in the pack of frozen blueberries and a decline in the pack of canned blueberries in recent years. This trend is expected to continue. Almost 100 per cent of Canadian blueberry exports go to the United States, and production in that country, especially the production of cultivated blueberries, is increasing rapidly; it increased from 13.2 million pounds in 1939 to 24 million pounds in 1949. Prospects are for continued expansion, particularly in the states of Michigan, Maine and New Jersey. Thus, in the future, Nova Scotia and New Brunswick may have to face stronger competition on the United States markets.

High returns in recent years have encouraged increased production. Output in Nova Scotia in 1954 was over three times that of the 1949-53 period. In view of the large area of potential blueberry land in Eastern Canada some decline in prices seems probable.

Blueberries are produced on run-out farm land in areas which have many abandoned farms. Although some farming is carried on the tendency is to combine the enterprise with woods work, and particularly the cutting of Christmas trees which has increased in importance in recent years. Established growers are generally increasing their output through burning; development of new land is restricted by the fact that there is as yet no satisfactory method for propagating blueberries on land where they are not already growing. Added costs of transporting or housing pickers may prove to be a limiting factor in the development of some outlying areas.

Buyers of blueberry land have sometimes been able to recover all costs including the purchase price of land from the proceeds of their first crop. This has led to considerable speculation, much of which is being carried on by syndicates and individuals other than farmers. Since the enterprise lends itself to large scale operation this trend is likely to continue.

ADJUSTING CASH LAND RENTS TO CHANGES IN PRICE LEVELS

D. J. PACKMAN

Adjustments in cash rentals are usually necessary for leases to remain fair, to both landlord and tenant, through periods of wide fluctuations in prices of farm products. When an unforeseen decline in prices follows the making of a lease, a tenant may find it difficult to pay the full cash rental agreed to in the lease agreement. He will then be the first to realize that the lease should have included provisions for adjustments under such circumstances. On the

other hand, when prices increase the landlord is likely to claim that the lease should have provided for an equitable distribution, between landlord and tenant, of the additional profits accruing as a result of the increase in the prices of farm products.

Th annual cash rent should represent the current value of the amount of produce which was required to pay the rent the year the lease was made. In other words, average prices over a period of years should be used as a basis for year-to-year adjustments. An annual settlement on a price-adjusted basis will usually prove more satisfactory to both parties than a tacit agreement to let the unpaid rent accumulate as unpaid debts during years of low prices. These debts may lead to an embarrassing financial situation, for the landlord as well as for the tenant, and may also create some friction and mutual resentment between the contracting parties.

An example may help illustrate the manner in which adjustments to changes in price levels may be made. If a farm in a mixed livestock producing area of Ontario is considered, then it may be advisable to use the price of milk, cattle, hogs, and poultry as a basis for determining the size of the rent. The required calculations for a typical 50-acre farm are explained, in summary form, in the accompanying synoptic table.

Calculation of Rent to be Paid on a Price-Adjusted Basis

Product	Amount, in dollars, for each product, to total \$100	Average Prices (1946-1949) ^a	Amounts required at 1946-1949 prices to equal \$100 ^b	Prices agreed on for adjustment	Adjusted value of products
	\$				\$
Cream.....	28	58·9c. lb. butterfat.....	47·5 lb.	60·8c. lb. butterfat.....	28·88
Cattle.....	37	\$15.08 per cwt. live weight.	245·0 lb.	\$18.95 per cwt. live weight.	46.43
Hogs.....	24	\$25.31 per cwt. dressed weight.	95·0 lb.	\$30.41 per cwt. dressed weight.	28.89
Eggs.....	11	42·21c. per doz.....	26 doz.	49·3c. per doz.....	12.82
Total.....	100				117.02

^a The prices used are the average farm prices for Ontario, as reported in the "Monthly Crop and Livestock Report", published by the Ontario Department of Agriculture.

^b The amount required, of each product, is found by dividing the percentage which that product contributes to farm income by the 1946-49 average and multiplying the quotient by 100. For Example: 28 divided by .589 = 47·5 lb. butterfat

On this farm it is assumed that, for every \$100 of income, \$28 came from the sale of cream, \$37 from cattle, \$24 from hogs and \$11 from poultry and eggs. At 58·9 cents per pound of butterfat, the average price for the 1946-49 period, 47·5 pounds would be required to secure \$28; at \$15.08 a hundredweight for cattle 245 pounds would be needed to equal \$37; at \$25.31 a hundredweight for hogs 95 pounds would be necessary to produce \$24; and at 42·2 cents a dozen 26 dozen eggs would be needed to make \$11. To arrive at the amount of cash to be paid as rent for the current year, one must then multiply the required amounts by the prices agreed to between landlord and tenant. In our example, these prices are the prices prevailing on the local market during the year under consideration, or 60·8 cents for butterfat, \$18.95 for cattle, \$30.41 for hogs and 49·3 cents for eggs. So, the amounts of these products that sold for \$100 during the 1946-49 period would now sell for \$117.02, which means that current prices amount to 117·02 per cent of prices during the earlier period.

If the tenant had previously paid \$675 as cash rent he would now pay 117.02 per cent of this amount, or \$789.88. If, instead of rising, prices had fallen, the rental would have been adjusted downward in a similar manner. The tenant usually pays one-half of the base rent after the first six months and makes the final payment as soon as or shortly after he and the landlord have agreed on the adjusted rental rate.

When a cash rental agreement is made for more than one year, prudence suggests that the two parties to this agreement should provide for rental adjustments, in line with the upward or downward changes in prices. If only one product is produced on the rented land, it may only be necessary to agree that the rental rate should increase or decrease by a percentage equal to the percentage change in the seasonal average price of the product. If, on the other hand, several products are produced the two parties may find it advantageous to follow the procedure outlined in our example. Or, they may wish to adjust the rental rates in accordance with current indexes of farm prices, the indexes selected depending on the kinds of products raised or harvested.

A straight cash lease is likely to reduce and even erase a tenant's equity in his capital, in the event of a crop failure or if farm prices fall below a certain level. To guard against this the tenant will tend to select only commodities which can be produced in less than a year, and which may contribute, over the years, to a decrease in the productivity of the farm. He may also be tempted to reduce the scale of his operations. Faced with the possibility of eventual bankruptcy as he adds to his liabilities, he will likely decide to curtail his borrowings and reduce his purchases of production materials. As landlords are just as interested as tenants in the continued successful operation of their farms, both parties may wish to avail themselves of the advantages of a flexible type of cash lease.

CROPPING PRACTICES IN THE EASTERN TOWNSHIPS, QUEBEC

L. R. FORTIER and A. GOSSELIN

The rolling and hilly lands of the Eastern Townships of Quebec are well suited to grass farming and livestock production. Except for Shefford county, the Townships have experienced an increase in the acreage in permanent pasture and an almost continuous decline in grain acreages, during the last 40 years, except during the war period when the Federal Government induced farmers to expand grain production. Pastures are not of uniformly good quality, and moss is found on many of the non-tillable pastures. However, the improvement of pastures is among the chief concerns of agricultural advisers and of the farmers themselves.

The importance given to pastures led to the selection of this area, by the Economics Division, for a study of the production of feed crops. This study, carried on in 1951 and 1953, included a description and analysis of cropping practices, as one of its major phases.

Farm business records were obtained in seven counties: Arthabaska, Compton, Mégantic, Richmond, Shefford, Sherbrooke and Stanstead. Seventy-four farmers were interviewed in 1951 and 84 in 1953; of the latter, 64 had also been visited in 1951. The analysis of the 1953 data only strengthened that of the 1951 data. So, the present discussion will be confined to a review of some of the findings made as a result of the 1953 study.

Land Use.—The size of the 84 farms included in the study ranged from 88.5 to 624.5 arpents¹ and averaged 232.2 arpents per farm. A large part of these farms was in pastured and non-pastured woods, which accounted for the large total acreage.

¹ 1 arpent = 845 acre.

For the purposes of the study, the 84 farms visited were sorted into four groups: farms without silage, corn silage, grass silage, and mixed silage (two or more kinds of silage) farms. The first group included 16 farms; the second, 12; the third, 31 and the fourth one, 25 farms.

The farms without silage and the corn silage farms averaged 213 arpents, and the grass silage and mixed silage farms averaged 252 and 229 arpents respectively. Corresponding figures for crop acreages are 74, 98 and 84 arpents respectively.

The average acreage in pasture was also smaller on the farms without silage (50 arpents) and on the corn silage farms (52 arpents) than on the grass silage (67 arpents) and mixed silage farms (64 arpents). Table 1 presents a descriptive summary of the distribution of land among various uses and, in particular, among five different types of pasture.

Cropping Systems.—The farms visited were located in that part of the province where farms are classified as livestock specialty dairy farms and livestock specialty general farms. Grain and forage crops are produced mainly for the feeding of dairy cattle, and also for hogs and poultry.

Table 1.—Percentage Distribution of Land Use on Farms Without Silage, Corn Silage, Grass Silage and Mixed Silage Farms, Eastern Townships, Quebec, 1953

	Farms without silage	Corn silage farms	Grass silage farms	Mixed silage farms	All farms
Number of farms.....	16	12	31	25	84
	— per cent —				
Area in crops.....	34.9	35.0	38.8	36.5	37.0
Area in pasture.....	23.5	24.3	26.7	28.0	26.2
Annual.....	1.0	1.9	2.6	2.3	2.1
Short term ladino.....	3.1	3.1	2.3	2.2	2.5
Crop rotation.....	4.7	4.4	3.1	3.9	3.8
Long term tillable.....	10.0	12.3	13.1	14.6	12.9
Permanent non-tillable.....	4.7	2.6	5.6	5.0	4.9
Woods pastured.....	7.7	17.9	15.5	18.5	15.3
Woods not pastured.....	31.9	17.7	17.0	14.5	19.0
Waste land, yards, etc.....	2.0	5.1	2.0	2.5	2.5
Total land area.....	100.0	100.0	100.0	100.0	100.0

The two most common crop rotations were the four-year and the five-year rotations. The four-year rotation was followed on 33 farms and the five-year rotation on 41 farms. On the remaining 10 farms the rotations ranged from three to eight years.

On 22 farms, the four-year rotation included one year of grain and three years of hay. The five-year rotation included one year of corn and grain, one year of grain and three years of hay on 19 farms, and one year of grain and four of hay on 13 farms.

The percentage distribution of the area in crops is described in Table 2. Mixed silage farms had a slightly larger proportion of their total crop area in grain than the other groups of farms. On farms without silage and on grass silage farms, the area in grasses and legumes represented 73 and 75 per cent, respectively, of the total crop area as compared with 62 per cent on mixed silage farms and 64 per cent on corn silage farms.

Fertilizing Practices.—On most farms the bulk of the commercial fertilizer and manure was applied to the first two or three crops, in a corn, grain and hay rotation.

Of the twenty-nine farms reporting corn for silage, 23 applied both commercial fertilizers and manure. The area on which commercial fertilizers were applied represented 92 per cent of the total area in corn. The most common practice was to apply from 300 to 400 pounds of 2-12-10 per arpent. The amounts applied, however, ranged from as little as 150 pounds per arpent on one farm to 675 pounds on another farm. Farm manure was applied to 93 per cent of the area in corn; the amount applied ranged from four to 25 tons per arpent but the most common rates were from 12 to 15 tons.

Fifty-seven of the 73 farms reporting grain applied commercial fertilizer and 36 applied manure. The area on which commercial fertilizers (2-12-10 or 2-16-6) were applied represented 73 per cent of the total area in grain.

Table 2.—Percentage Distribution of Crop Area on Farms Without Silage, Corn Silage, Grass Silage and Mixed Silage Farms, Eastern Townships, Quebec: 1953

	Farms without silage	Corn silage farms	Grass silage farms	Mixed silage farms	All farms
Number of farms.....	16	12	31	25	84
	— per cent —				
Grain—					
Mixed grain.....	19.5	11.3	13.3	10.7	13.3
Oats.....	4.7	13.2	8.5	12.0	9.5
Other grain.....			1.2	0.7	0.9
Grain for hay and silage.....	0.4	0.7	1.4	4.3	2.0
	24.6	25.2	24.4	27.7	25.7
Row crops—					
Corn silage.....		10.1		7.4	3.4
Fodder corn.....	1.0				0.1
Roots.....	0.1	0.2	0.2	0.7	0.3
	1.1	10.3	0.2	8.1	3.8
Grasses and legumes—					
Hay.....	73.0	63.6	57.2	50.8	58.7
Grass silage.....			17.7	11.6	10.8
	73.0	63.6	74.9	62.4	69.5
Fruits and vegetables.....	1.3	0.9	0.5	1.8	1.0
Total crops.....	100.0	100.0	100.0	100.0	100.0

Applications ranged from 128 to 571 pounds and averaged 296 pounds per arpent. Farm manure was applied to 30 per cent of the area seeded to grain at an average rate of eight tons per arpent.

Lime was used on 26 farms and applied on 23 per cent of the area in grain, at an average rate of 1.8 tons per arpent. Commercial fertilizers and manure ensured better grain yields, and a good catch of grass seed when the grain was used as a nurse crop for the establishment of new meadows and pastures.

Hay crops benefit from the fertilization of the preceding nurse grain crop. On most farms, however, the first hay crop is the only one to have received a direct application of manure, either on the new grass seeding after harvest of

the nurse crop or the following spring. Little commercial fertilizer is applied to the hay crop. Of the 1,568 arpents seeded to hay or grass silage in 1952, 923 were manured. The amount applied averaged nine tons to the arpent and the most common rates varied from eight to 12 tons per arpent. This practice was followed on 50 farms.

Only a very small proportion of the total area in hay was fertilized, either with farm manure or commercial fertilizers, the second and third years after seeding. As a result yields declined constantly, and the proportion which legumes represent of total hay harvested also declined from year to year. (Table 3.)

Commercial fertilizer and manure were not applied on permanent non-tillable pasture. Commercial fertilizer was applied on only about 17 per cent of the area in long term tillable pasture from 1948 to 1950; and on only 14 per cent in 1951, eight per cent in 1952 and five per cent in 1953. The rates of application ranged from 104 to 500 pounds and averaged 317 pounds per arpent during the 1951-1953 period. The 2-12-6, 2-12-10, and 2-16-6 were the most commonly employed fertilizer formulas. Very little manure was applied on the long term tillable pastures.

From 1951 to 1953 commercial fertilizers (2-12-6, 2-12-10 or 0-16-6) were applied once on the rotation pasture. The rates of application ranged from 100 pounds per arpent on one farm to 1,000 pounds on another farm and averaged

Table 3.—Hay Yields and Composition of Hay Harvested, According to Year of Seeding, 84 Farms, Eastern Townships, Quebec, 1953

Year of Seeding	Average yield per arpent	Composition of Hay Harvested			
		Alfalfa	Clover	Timothy	Other
	— tons —	— per cent —			
1952.....	1.8	5	48	47	.....
1951.....	1.5	3	20	76	1
1950.....	1.4	2	8	84	6
1949.....	1.3	5	9	86	.....

476 pounds per arpent. Short term ladino pastures were fertilized every two years; 2-12-6, 2-12-10 or 0-16-8 were the fertilizer formulas employed. The rates of application ranged from 214 to 851 pounds and averaged 356 pounds per arpent in 1951; they ranged from 85 to 500 pounds and averaged 328 pounds per arpent in 1953. Fertilizers were applied to 98 of the 297 arpents in short term ladino pasture in 1951 and to 126 of the 490 arpents in this type of pasture in 1953. Farm manure and lime are seldom applied to pastures.

The area in annual pasture was fertilized with commercial fertilizer (2-12-6, 2-12-10 or 5-10-13) and manure. Commercial fertilizer was applied on 77 per cent of the area, at a rate averaging 343 pounds and ranging between 85 and 800 pounds per arpent. Manure was applied on 60 per cent of the area, at a rate averaging ten tons and ranging between four and 17 tons per arpent. Seventeen per cent of the area in annual pasture was limed; the average application amounted to 1.9 tons per arpent.

Seeding Practices.—The composition of the hay seed mixtures and the amount used per arpent varied from farm to farm. The seed mixtures included timothy, red clover and alsike, 29 farms; alfalfa and ladino were added to the mixture on six farms; ladino alone was added on nine farms and alfalfa alone on 19 farms. Rates of seeding ranged from eight to 20 pounds per arpent but the most common rates were from ten to 12 pounds.

The seed used for grain was certified seed on 24 farms and home grown grain on 48 farms. Only four farms used western grain for seed and the remaining farms used a combination of certified and home grown seeds.

Hay and Grass Silage Harvesting Period.—Haying operations started in the second half of June on 31 farms; hay was then in early bloom. On an equal number of farms haying operations started during the first ten days of July when about 50 per cent of the hay was in bloom. Hay was cut at a later date on the other farms and indications are that the feeding value of that hay was low. Grass silage was harvested at an early stage on most farms, that is, from the middle to the end of June, as recommended by agricultural representatives in the area. On grass silage farms, grass was harvested in July, at a more advanced stage of maturity.

The use of grass silage was reported by 17 mixed silage as well as by the 31 grass silage farms. It had been harvested for the first time on five farms, the second time on eight, the third on 11, the fourth on four and the fifth time on two farms. It had been harvested for as long as 24 years on one farm and from six to 12 years on the remaining 17 farms.

Grazing Practices.—The pasture program was not planned to permit rotational grazing. Most of the area in long term tillable crop rotation and short term ladino pastures were grazed throughout the entire pasture season. On the average, about 43 per cent of the total area in permanent non-tillable pasture was grazed each month during the pasture season.

Annual pastures were grazed mostly during the months of July and August. Aftermath pastures were available in July and August, and the peak pasture months were September and October.

On the average 2.6 arpents of pasture were required per cow. However, there were farms where as little as 0.8 arpent was required and others where as much as 13 arpents were needed per cow. On 32 farms less than two arpents were required; on 22 others from two to three arpents, and on the remaining 30 farms from three to thirteen arpents.

Crop Yields.—The 1953 season was favourable to grain production, and yields were the highest in several years. Yields of mixed grains averaged 34.5 bushels and ranged from 12 to 67 bushels per arpent; yields of oats averaged 36.0 bushels and ranged from 19 to 76 bushels per arpent.

Corn silage averaged 9.1 tons and ranged from 2.5 to 10.3 tons per arpent; and grass silage averaged 5.8 tons, ranging from 2.1 to 10.3 tons per arpent. For hay the corresponding figures were 1.5 tons and 0.6 to 2.9 tons per arpent.

The yields of various crops were computed in terms of Total Digestible Nutrients. Table 4 presents a summary of the percentage distribution of TDN provided by various types of crops on the four different types of farms.

The average output of TDN was calculated for each group of farms in order to measure the effect of various crop combinations on the TDN output per farm. The mixed silage farms had the highest output—1,398 pounds of TDN per arpent; the grass silage farms had an average of 1,262 pounds of TDN per arpent. The two other groups of farms had about the same average per arpent—1,127 pounds on farms without silage and 1,125 pounds on corn silage farms.

The average production of Total Digestible Nutrients per arpent, with different rotations, was calculated for the three-year period 1951-53. On 12 farms with a five-year rotation (including corn) the average production of TDN was 1,531 pounds per arpent per year; on 22 farms with a four-year rotation (one grain and three hay) the average production was 1,547 pounds and on 13 with a five-year rotation (one grain and four hay) the average

Table 4.—Percentage Distribution of Average Production of Total Digestible Nutrients on Farms Without Silage, Corn Silage, Grass Silage and Mixed Silage Farms, Eastern Townships, Quebec, 1953

	Farms without silage	Corn silage farms	Grass silage farms	Mixed silage farms	All farms
Number of farms.....	16	12	31	25	84
	— per cent —				
Grain.....	22	17	17	18	18
Silage.....	22	22	27	37	25
Hay.....	76	60	56	45	56
Other crops.....	2	1			1
Total.....	100	100	100	100	100

production was 1,411 pounds per arpent. Rotations including three years of hay produced more TDN per arpent than rotations including four years of hay. Yields of hay in four-year old fields were low.

Conclusion.—This review of cropping practices illustrates the increasing use of grass silage, as a method of harvesting and storing grasses and legumes. It also stresses the need to fertilize hay and pasture fields. Rotations which included three years of hay produced more nutrients than rotations with four years of hay. Farms with more than one type of silage and farms with grass silage produced more nutrients per arpent than corn silage farms or farms without silage. In planning their cropping program farmers may find it useful to compare these practices and the results obtained with the recommended practices of agricultural advisers and the results obtained on experimental farms.

WORLD STATISTICS

According to the data contained in the 1954 issue of the United Nations Statistical Yearbook (see Publications of the United Nations, p. 48), in 1953 world industrial production¹ was about twice as large as in 1929, almost twice as much freight was hauled on the world's railways as in 1929 and over 40 per cent more goods were carried by ships as in 1929.

Estimates of total world population show an increase of almost 30 per cent between 1930 and 1953 or of about 15 per cent between 1940 and 1953. In mid-1953 world population was estimated to range between 2,459 million and 2,634 million people.

The value of world¹ trade was a little smaller in 1953 than in the two preceding years but almost 3.5 times greater than in the last prewar year (1938), because of an increase of about 50 per cent in volume and a much larger percentage increase in world prices.

The dollar area (United States, Canada, and part of Latin America), the sterling area (United Kingdom, Commonwealth countries except Canada, Colonies and certain countries in Europe and Asia) and Continental Western Europe accounted for almost 82 per cent of the world trade in 1953, compared with 79 per cent in 1938. However, the share of the dollar area had risen from 19 to 30 per cent whereas the share of the sterling area had fallen from 29 to 25 per cent and that of Continental Western Europe from 30 to 27 per cent.

¹ Excluding the U.S.S.R., Eastern Europe and Mainland China.

Since the war the United States have become the largest single trading country. The U.S. share of world trade rose from about 12 per cent in 1938 to 18 per cent in 1953 while the United Kingdom's share declined from 15 to 11 per cent. Canada and Western Germany are the next most important trading countries. Western Germany forged ahead of France in 1953 but the latter remained the largest importing country in Continental Western Europe.

NINTH INTERNATIONAL CONFERENCE OF AGRICULTURAL ECONOMISTS

The Ninth International Conference of Agricultural Economists will be held at Helsinki, Finland, August 19-26, 1955.

The general conference theme will be *The Implications of Technical Change in Agriculture*. This theme will be discussed with reference to the economics of the farm, marketing processes, national welfare and international trade.

The tentative program includes symposia on: (1) *The Meaning of Technical Change in the Context of the Agricultural Economy of Different Environments*; (2) *The Inter-action between Technical Changes on the Farm and Technical Changes in Marketing and Distribution*; and (3) *The Adequacy, from the Point of View of Technical Development, of Contemporary Institutional Systems*.

Papers will be presented on:

- 1) The sociological and cultural problems associated with technical change in agriculture;
- 2) The relative incidence on agriculturists and on other groups of the benefits resulting from technical change in agriculture;
- 3) The influence of consumption changes on the use of resources and on technical changes in agriculture;
- 4) The impact of technical change on the employment situation within agriculture and on the occupational structure of the population;
- 5) The finance of the additional capital required for technical change;
- 6) The interdependence of agriculture and forestry;
- 7) The impact of technical changes on woodland management and the significance of forestry in world economy;
- 8) The activities of governmental and other agencies in encouraging technical developments;
- 9) The inter-action between technical changes in agriculture and the pattern of international trade;
- 10) The contribution of the agricultural economist to programs of technical development;
- 11) The relation between the pace of technical change in farming and the level of agricultural prosperity;
- 12) Political obstacles tending to retard the increased economic welfare offered by technical change in agriculture.

An "outward tour" will precede and a "return journey" will follow the Conference. The outward tour will take the visitors through the polder areas of Belgium and Holland, the "reclamation work" of the Zuider Zee, and the farming areas of Jutland and Central Sweden. Farm visits will be made in Denmark and Sweden.

On the return journey the touring party will visit the Animal Breeding Station at Wiad, the world-famous plant breeding station at Svalof, animal breeding organizations and farms in the Copenhagen area and farms at Funen. In Germany they will see the farming centers of the Rhine Valley and Central Germany. The final part of the tour will be through Belgium, by way of Brussels.

PUBLICATIONS OF THE ECONOMICS DIVISION

Farm Mechanization in Ontario and Quebec. Dawson, J. A. and L. R. Fortier. Dept. of Agriculture Pub. 921. November 1954. pp. 23.

A report on an economic study of mechanization on 147 Ontario and 150 Quebec farms. The findings are discussed under the following headings: *Organization of Farms; Tractors Versus Horses; Costs of Tractor Operation; Horse Costs; Costs of Performing Operations; and Rates for Hired Machine Work.*

"Bias Arising in Wording Consumer Questionnaires". Drayton, Leslie E. In *The Journal of Marketing*. Vol. XIX, No. 2, Oct. 1954. pp. 140-145.

In this article L. E. Drayton of the Economics Division, Canada Department of Agriculture, discusses the difficulties involved in designing consumer interview studies in such a manner as to reduce the degree of bias in consumers' replies. His discussion is based on a comparison of three questionnaires used in a cheese consumption survey in the city of Ottawa in 1952. He comes to some definite conclusions which may be of use to researchers in consumption economics.

UNITED NATIONS PUBLICATIONS

Available from: Sales and Circulation Section, Dept. of Public Information, United Nations, New York, U.S.A.

In Canada: The Ryerson Press, 299 Queen St. West, Toronto; and Periodica Inc., 5112 Ave. Papineau, Montreal, 34.

Estimation of Crop Yields, 1954, pp. ii & 61.

A manual prepared by the Economics Division of the Food and Agriculture Organization. It gives a brief account of the current methods used in estimating crop yields and provides a comprehensive analysis of the crop-cutting technique of measuring yields.

The *Introduction* is followed by sections on: *Current Methods of Estimating Crop Yields; The Technique of Objective Measurement of Yield by Crop Cutting; General Considerations in the Design of Crop Cutting Surveys; Some Technical Considerations; Field Work and Personnel; Conclusion; and References.*

Activities of FAO under the Expanded Technical Assistance Program 1953-54. December 1954. pp. 80 & 2 graphs and 2 charts.

The main part of this review deals with: *Four Selected Projects; Africa; Asia and the Far East; Europe; Latin America; Middle East; and Regional Projects and Training Centers.*

The Work of FAO 1953-54. A Progress Report. July 1954. pp. 60.

A detailed report describing the activities of FAO, in 1953-54, in the fields of agriculture, economics, fisheries, forestry, nutrition, and information and education.

Statistical Yearbook 1954. 1954. pp. 594.

The sixth issue of the yearbook prepared by the Statistical Office of the United Nations. It includes statistics on: *Population; Manpower; Agriculture; Forestry; Fishing; Industrial Production; Mining, Quarrying; Manufacturing; Construction; Electricity, Gas; Consumption; Transport; Communications; Internal Trade; External Trade; Balance of Payments; Wages and Prices; National Income; Finance; Public Finance; Social Statistics; and Education, Culture.* The statistical tables are based on information received up to the end of 1954.

THE ECONOMIC ANNALIST

A BIMONTHLY REVIEW OF AGRICULTURAL BUSINESS

G. P. BOUCHER, Editor

JUNE 1955

Vol. XXV, No. 3

CONTENTS

	Page
The Economic Situation.....	51
Aerial Photography and Crop Recognition..... <i>D. J. Packman and L. E. Philpotts</i>	53
Consumer Acceptance of Ontario Fresh Market Peaches..... <i>J. M. Fitzpatrick</i>	58
Significance of Locker Plants in Food Marketing..... <i>L. E. Drayton</i>	60
Comparative Costs of Furrow and Sprinkler Irrigation of Tree Fruits in the Okanagan Valley..... <i>G. C. Ferries and J. C. Wilcox</i>	63
The Effects of Beef Quality on Prices in the Toronto Area, 1954..... <i>G. E. Woollam and K. E. Cann</i>	66
Organization Features of Farms on Light, Medium and Heavy Textured Soils in the Prairie Area of Saskatchewan..... <i>H. L. Biehn</i>	68
Publications of the Economics Division.....	70
Publications of the United Nations.....	70
Other Publications.....	71

MARKETING SERVICE, ECONOMICS DIVISION

J. F. BOOTH, Chief

Published by Authority of the Right Honourable James G. Gardiner
Minister of Agriculture

ANNUAL AND MONTHLY INDEX NUMBERS

WHOLESALE PRICES, FARM PRICES AND LIVING COST INDEXES

Year	Wholesale Prices 1935-1939=100				Farm Prices of Agricultural Products 1935-39 = 100 (e)	Commodities and Services used by Farmers 1935-39=100		Consumer Price Index (1949 = 100) (h)	Food Index (1949 = 100) (i)	Index of industrial production (1935-39 = 100) (j)
	(a) General Wholesale Index	(b) Farm Products	(c) Field Products	(d) Animal Products		(f) Equipment and Materials	(g) Composite Index			
1913.	83.4					85.4		49.2	44.4	
1914.	85.4					90.2	85.3	49.6	46.0	
1915.	91.8					96.9	91.6	50.3	46.8	
1916.	109.8					101.7	100.5	54.2	51.8	
1917.	148.9					140.7	140.5	63.7	66.9	
1918.	166.0					164.1	160.2	72.0	76.9	
1919.	174.7					169.1	167.9	78.8	82.2	
1920.	203.2					190.1	186.5	90.5	94.4	
1921.	143.4					147.4	152.5	80.9	72.5	
1922.	126.8					124.6	134.1	74.9	61.5	
1923.	127.7					118.3	130.6	75.2	61.9	
1924.	129.5					122.3	131.9	74.0	60.7	
1925.	133.8					123.2	131.8	74.6	63.4	
1926.	130.3	144.4	158.5	130.2		119.9	130.6	75.9	66.6	
1927.	127.3	138.6	149.4	127.8		119.9	131.2	74.6	65.3	
1928.	125.6	136.3	134.3	138.2		118.3	129.3	75.0	65.6	
1929.	124.6	140.8	137.2	144.4		117.6	127.9	75.8	67.1	
1930.	112.9	119.5	105.8	133.3		105.6	117.0	75.3	65.6	
1931.	94.0	78.9	65.0	92.7		92.2	100.9	67.9	51.4	
1932.	86.9	65.5	60.4	70.5		89.3	93.3	61.7	42.8	
1933.	87.4	69.3	69.3	69.2		88.8	89.8	58.8	42.3	
1934.	93.4	83.5	80.5	86.5		96.8	95.5	59.6	46.2	
1935.	94.4	89.2	84.4	94.1	88.0	95.6	95.4	59.9	47.2	85.6
1936.	96.7	97.9	102.2	93.7	96.9	98.7	98.1	61.1	48.8	94.6
1937.	107.8	117.4	128.9	106.0	119.7	108.4	105.3	63.0	51.4	108.0
1938.	102.0	102.9	100.9	104.8	105.0	101.7	101.7	63.7	51.7	102.0
1939.	99.2	92.6	83.7	101.5	91.8	95.7	99.3	63.2	50.2	109.7
1940.	108.0	96.1	85.4	106.7	96.8	101.8	106.8	65.7	52.6	131.4
1941.	116.4	106.6	88.9	124.4	110.2	107.8	116.1	69.6	57.9	164.8
1942.	123.0	127.1	109.7	144.6	133.1	119.2	131.6	72.9	63.4	195.7
1943.	127.9	145.4	129.0	161.8	157.8	122.4	143.4	74.2	65.2	208.5
1944.	130.6	155.3	144.5	166.1	172.4	126.0	148.0	74.6	65.5	212.4
1945.	132.1	166.4	162.5	170.2	185.7	125.9	152.1	75.0	66.3	187.2
1946.	138.9	179.5	177.9	181.2	204.1	128.0	157.0	77.5	70.0	171.9
1947.	163.3	192.2	184.1	200.2	215.8	139.5	170.4	84.8	79.5	187.8
1948.	193.4	232.1	200.6	263.7	255.8	173.1	197.4	97.0	97.5	196.3
1949.	198.3	228.7	191.9	265.4	255.4	180.3	204.1	100.0	100.0	199.6
1950.	211.2	236.7	191.9	281.4	260.8	189.9	210.4	102.9	102.6	211.5
1951.	240.2	268.6	200.4	336.9	296.8	206.0	230.0	113.7	117.0	226.5
1952.	226.0	250.2	223.0	277.5	274.4	215.8	243.1	116.5	116.8	232.9
1953.	220.7	220.9	178.1	263.8	249.4	207.4	239.8	115.5	112.6	248.4
1954.					232.1	203.3	235.9	116.2		
1954										
Feb.	219.1	212.3	160.0	264.7	238.6			115.7	111.7	239.4
Mar.	218.7	210.2	158.3	262.0	233.0			115.5	110.7	236.8
Apr.	218.0	209.0	157.6	260.4	238.4	204.1	238.0	115.6	110.4	242.4
May	217.9	213.1	158.2	268.0	233.3			115.5	110.2	245.6
June	217.6	213.1	158.9	267.3	234.9			116.1	112.0	252.5
July	217.4	217.8	173.6	262.1	234.5			116.2	112.1	238.5
August	215.8	207.9	167.6	248.2	231.2	201.9	238.7	117.0	114.4	246.7
Sept.	215.3	204.1	162.6	245.5	227.5			116.8	113.8	253.7
Oct.	214.3	201.1	161.8	240.5	220.0			116.8	113.8	256.0
Nov.	214.9	203.8	164.0	243.6	219.3			116.8	113.4	254.4
Dec.	215.4	204.7	163.5	245.9	219.7			116.6	112.6	240.6
1955										
Jan.	215.7	207.0	165.6	248.4	221.2	205.8	231.7	116.4	112.1	238.3
Feb.	217.4	206.7	167.6	245.8	222.3			116.3	111.5	247.6
Mar.	217.4	203.7	166.1	241.3	221.6			116.0	110.7	
Apr.	218.5	212.7	186.8	238.7	228.6			116.1	111.0	

(a) Canada. Dominion Bureau of Statistics, Labour and Prices Division. *Prices and Price Indexes*. Ottawa, Monthly.

(b) Ibid. (a). Wholesale prices of products of Canadian farms.

(c) Ibid. (a). Wholesale prices of grains, hay, tobacco and potatoes.

(d) Ibid. (a). Wholesale prices of animals and animal products.

(e) Canada. D.B.S., Agriculture Division. *Index Numbers of Farm Prices of Agricultural Products*. Ottawa, Monthly.(f) Canada. Dominion Bureau of Statistics, Labour and Prices Division. *Price Index Numbers of Commodities and Services Used by Farmers*. Ottawa, Jan., Apr. and Aug. Includes prices of commodities in 8 groups including farm implements, building materials, gasoline, oil and greases, feed, fertilizer, binder twine, seed and hardware.

(g) Ibid. (f). Includes the 8 commodities indicated above plus tax rates, interest rates and farm wage rates.

(h) Canada. Dominion Bureau of Statistics, Labour and Prices Division. *Price Movements*. Ottawa, Monthly.(i) Canada. Dominion Bureau of Statistics, Labour and Prices Division. *Prices and Price Indexes*. Ottawa, Monthly.

(j) Canada. Dominion Bureau of Statistics. Canadian Statistical Review. Ottawa, Monthly.

THE ECONOMIC SITUATION

Prices.—The consumer price index for Canada rose from 116.0 to 116.1 between March 1 and April 1, 1955. Small increases in foods and shelter outweighed small decreases in other groups. The indexes for clothing, household operation and other commodities declined 0.1 per cent; the shelter component increased by 0.1 per cent and foods by 0.3 per cent.

The food index rose from 110.7 to 111.0; higher prices for flour, tea, eggs, fresh fruits, potatoes and chicken outweighed lower prices for coffee, margarine, most fresh vegetables and pork items.

The index of Canadian farm product prices at terminal markets moved from 202.9 for March 25 to 215.2 for April 22. A marked advance in potato prices influenced by extensive frost damage to United States spring plantings, was reflected principally in the field products index, which rose from 166.1 for March 25 to 191.7 for April 22. Prices were higher for western flax, rye and hay and eastern oats and lower for eastern wheat, corn and barley. The index for animal products moved from 239.7 to 238.8 during the same period. Decreases were recorded in the prices of calves, butterfat and fluid milk in Eastern Canada and hogs in Western Canada, and strength in the prices of eastern lambs, poultry, eggs, cheese, milk and raw wool, and western steers and eggs.

Industrial Production.—The composite index of industrial production for February 1955 stood at 247.6 compared with 239.4 for February 1954. The manufacturing component rose from 251.0 to 253.8. The index of mineral production advanced from 181.8 to 203.1 and the sub-index measuring the output of electricity and gas rose from 250.6 to 283.5.

The index of non-durable manufactures rose from 212.9 in February 1954 to 220.3 in February 1955. There was an increase of 20 per cent in the output of the textile industry and of from 2.5 to 6.0 per cent in most other groups, including foods and beverages, tobacco products, rubber products, paper products, and printing and publishing. Small declines were recorded by the clothing and chemicals industries.

The composite index of durable manufactures, on the other hand, moved from 310.5 in February 1954 to 306.1 in February 1955. Output of non-ferrous metal products rose by 13 per cent and output of wood products by 11 per cent. Elec-

trical apparatus and non-metallic minerals recorded gains of 8.0 per cent and 4.5 per cent, respectively. Production of transportation equipment was about 22 per cent lower and that of iron and steel products 1.4 per cent lower than in February last year.

For the first two months of this year the index of industrial production averaged 243.0 compared with 234.3 for the corresponding period of 1954.

Farm Cash Income.—Recent figures issued by the Dominion Bureau of Statistics place the cash income of Canadian farmers from the sale of farm products at \$2,377.8 million for 1954, a decrease of 14.3 per cent from the revised 1953 total of \$2,776 million and of 16.5 per cent from the all-time high of \$2,849.3 million in 1952.

Most of the reduction in farm cash income in 1954 occurred in the Prairie Provinces, largely as a result of a substantial decrease in marketing of grains, especially wheat, and lower prices for wheat and barley. Supplementary payments to western farmers under the Prairie Farm Assistance Act totalled \$2.4 million in 1954 compared with \$1.6 million in 1953 and \$5.1 million in 1952.

Income from the sale of wheat declined from \$654.1 million in 1953 to \$322.6 million in 1954—the largest income decline for any single commodity. Income from the sale of coarse grains was also well below that secured in 1953. Smaller returns were also obtained from sales of rye, corn, potatoes, vegetables and sugar beets. Larger incomes were realized from sales of flaxseed, hay, tobacco, and clover and grass seed.

Receipts from sales of livestock in 1954 totaled \$705.1 million, about seven per cent more than in 1953, mainly as a result of increased marketings of all classes of live stock and higher prices for hogs. Prices for other classes of live stock were, on the average, below the 1953 level.

Income from dairy products in 1954 is estimated at a new record high level of \$426.2 million, exceeding by 2.5 per cent the 1953 peak of \$415.9 million; increased production outweighed slightly lower prices. Receipts from sales of eggs declined about 18 per cent and represented the greatest reduction of income for the sale of any of the live stock products; larger marketings were more than offset by much lower prices. From \$136.3 million in 1953 receipts from this source declined to \$112.2 million in 1954. In-

come from poultry meat rose from \$134.2 million in 1953 to \$136.5 million in 1954.

Foreign Trade.—According to preliminary figures issued by the Dominion Bureau of Statistics Canada's foreign commodity trade continued to expand during March 1955. Imports and exports were larger than in March 1954.

Exports to the United Kingdom, other Commonwealth countries, the United States and other foreign countries were higher in value in March this year than in March 1954 and total exports for the first three months of the year were also larger than in the first three months of 1953, except for exports to "other foreign countries". Imports from all four country groups were also higher in March and in the first three months of this year, except for imports from the United Kingdom.

Total exports in March rose from \$321.2 million in 1953 to \$354.8 million in 1954, and imports increased from \$353 million to \$406.7 million, leaving an import surplus of \$51.9 million compared with one of \$31.8 million in March 1954. In the first three months of 1955 exports totaled \$966.4 million compared with \$866.3 million in the first three months of 1954. Corresponding figures for imports were \$1,021.2 million and \$925.9 million respectively, resulting in a decrease from \$59.6 million to \$54.8 million in the import balance.

Exports to the United States rose from \$205.2 million in March 1954 to \$214.9 million in March this year. Imports from the same country rose from \$270 million to \$316 million thus raising the import surplus from \$64.8 million to \$101.1 million. In the January-March period exports rose from \$537.2 million to \$579.6 million and imports from \$690.1 million to \$776.7 million; the import surplus at the end of March rose to \$197.1 from \$152.9 million in March 1954.

Shipments to the United Kingdom increased from \$52.8 million in March 1954 to \$65.6 million in March this year, and imports from \$30.9 million to \$32.4 million, leaving an export surplus of \$33.2 million compared with one of \$21.9 million in March 1954. For the first three months of the year exports rose from \$135.9 million in 1953 to \$183.8 million in 1954 but imports decreased from \$88.2 million to \$85.5 million, leaving an export surplus of \$98.3 million compared with one of \$47.7 million in the first three months of last year.

Exports to other Commonwealth countries rose from \$13.7 million in March

1954 to \$18.9 million in March 1955, and imports from \$9.4 million to \$13.3 million. For the first quarter of the year exports rose from \$37.4 million in 1954 to \$52.5 million in 1955, and imports from \$28.9 million to \$36.1 million.

Stocks of Canadian Grain.—Stocks of Canadian wheat in store or in transit in North America on April 6 amounted to 330.5 million bushels, compared with 352.8 million bushels a year earlier.

Total stocks of the five major Canadian grains in all North American positions (excluding Newfoundland) at the end of March were estimated at 1,030 million bushels compared with 1,280.9 million bushels at the end of March 1954 and the record level of 1,353.4 million bushels at the same date in 1943.

Total stocks of Canadian wheat were estimated at 621.5 million bushels compared with 740.7 million bushels a year earlier and the 1945-54 average of 384.8 million bushels. Stocks held on farms are estimated at 286 million bushels, or about 46 per cent of the total. Rye stocks totalled 25.4 million bushels, second only to the record 26 million bushels on March 31, 1954.

Oats stocks are estimated at 200.9 million bushels, compared with 281.2 million a year earlier and the 10-year average of 217.8 million bushels. Barley stocks amounted to 175.7 million bushels compared with 227.2 million a year earlier and the 10-year average of 120.4 million bushels. Stocks of flaxseed were estimated at 6.5 million bushels, about the same as the 10-year average but a little lower than the 5.9 million bushels on hand a year earlier.

Wheat Supplies.—Supplies of wheat remaining for export and for carry-over, on or about March 1, in the four major exporting countries at the end of their respective crop years totalled 1,941.2 million bushels compared with 1,959.7 million bushels a year earlier. This was the first time since July 1, 1952 that total supplies for export and carry-over in these countries at the beginning of the "current" month had fallen below those of the same month in the preceding year.

The drop in Canadian supplies accounted for the decline; supplies in each of the other three countries still exceeded those of a year before. Supplies at March 1 were held as follows (figures in million bushels and figures for 1954 in brackets): United States, 1,052.3 (979.5); Canada, 569.7 (684.6); Australia, 161.9 (149); and Argentina, 157.3 (146.5).

AERIAL PHOTOGRAPHY AND CROP RECOGNITION¹

D. J. PACKMAN AND L. E. PHILPOTTS

Although vertical air photos have been extensively used by agriculturists in the past, all of the possible uses have not been exploited. However, there is reason to believe that considerable expansion in their use will take place in the near future.

The process of learning to interpret land use from vertical air photos is largely a deductive one. Confidence may be gained from continuous investigation and enquiry, as well as a knowledge of the farm organization of the area under study. The brief discussion which follows is intended to assist the novice in developing a deductive process which will enable him to gain confidence and therefore greater accuracy in his work.

This article is not intended to cover all aspects of air photo interpretation for agricultural workers but simply to emphasize the identification of agricultural crops with a few illustrations of man-made features such as roads, ditches, etc.² Much of the minute detail has been lost in reproducing these air photos. However, it is hoped that they will serve to illustrate a few of the principles of air photo recognition insofar as agriculture is concerned. Space limitations have made it necessary to use single photos rather than stereoscopic pairs as illustrations and thus the reader will not obtain the benefit of the third dimensional view.

General.—A great deal can be learned from a detailed study of aerial photographs that escapes the attention of the casual observer. It is only through the use of a stereoscope that the full potentialities of aerial photographs can be realized. The identification of features requires a certain amount of practice and it is well if the novice can actually compare the photographs with the actual features on the ground. By so doing he can soon learn to recognize natural and man-made features represented on the photographs. He can also learn the limitations of any type and scale of photography for a given purpose.

Tone.—By studying the elements of photographic record one is able to understand how it is possible to build up a picture of conditions on the ground. For example, it will be noted (Figure 1) that the tones or shades vary from black through a series of grays to white. Combinations of the individual tones establish definite patterns which become the key to identification by tone.

Pattern.—Orchards or plantations of trees, for example, can be distinguished from natural forest land by the regular spacing of trees. Various types of land use and field patterns are also easily recognized. Streams may be identified by their meandering patterns and the vegetation commonly growing on them.

Texture.—Texture may be illustrated by the relative size, density and arrangements of a group of similar objects on the ground. For example, note the difference between the homogeneous tone of a new seeding of hay (Figure 1) and the medium tone of a field of hay seeded several years ago.

Shadow.—Shadow is the result of sunlight and it, therefore, depends on the elevation of the sun at the time the photos were taken. It also depends on the irregularity of the ground surface both in the sense of topography of the ground surface and of individual objects such as trees and crops protruding far enough above their surroundings to catch the sunlight. An example of how shadow modifies the tones and texture may be illustrated by the sunlit side of a gently rounded hilltop which has all its tones lightened in contrast to the general darkening of the tone on the slope away from the sun even though there may be no difference in the nature of the cover. Shadows may disclose the shape and size of an object even though the object itself may be

¹ Packman, D. J. and L. E. Philpotts. Air Photograph Study. *The Economic Annalist*, Dec. 1953, pp. 126. A brief history of the uses of air photos.

² A more detailed report on the use of air photos in agriculture is being prepared for publication.

unrecognizable on the vertical photograph. Vertical dimensions of the objects, as shown by the shadow, may be more characteristic than the horizontal dimensions as shown by the image, or its tone may blend with the surrounding landscape while its shadow may stand out in contrast.

Outline.—Outline will be generally irregular in the case of natural features and generally regular in the case of artificial man-made features such as roads, fences, tile-drainage, etc.

Radial Displacement.—Because of the much greater distance from the edge than from the centre of the air photo to the camera, there is a distortion of the images on the outer edges known as radial displacement. The effect of radial displacement is easily seen in any air photograph of objects having considerable vertical dimension such as trees, buildings, etc. These appear to lean outwards from the centre. The farther from the centre and the taller the object, the greater is the leaning effect.

General Properties

Before making use of a set of air photographs, full details should be obtained as to their properties—the elevation at which they were taken, date, negative scale, whether they are contact prints or enlargements of the original negatives and overlap. As the scale of the original photograph determines the limit of observable detail, it has an important bearing on the extent of interpretation possible. The percentage overlap is important in connection with the stereoscopic examination of photographs and planimetric control for the purpose of transferring pertinent data to base maps.

Measurement

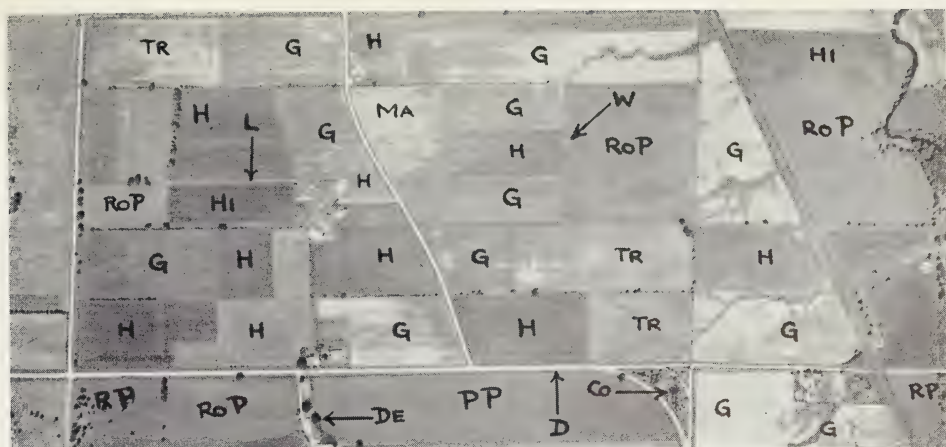
Distances between two points may be easily measured on the photograph. There are various ways of obtaining the scale of a photo. The system used depends on the accuracy required. Township, concession or other ground surveyed plans, when available, or actual tape or chain measurements, made of any field, etc., will generally give sufficient accuracy. The use of flying and camera data, plus a reasonable estimation of the average ground height will afford measurements for general use. The larger scaled topographical maps, such as one mile to the inch, have been used and found sufficient for general measurements.

Areas may be measured by constructing a scaled grid on any transparent material and placing it upon the area to be measured. Because of flying errors, topographical relief, and due to optical distortion, the scale on the photos is not constant. Different scaled grids can be easily constructed. These are generally sufficiently accurate for most of the work which the farmer, the appraiser or the agricultural specialist may be called upon to do.

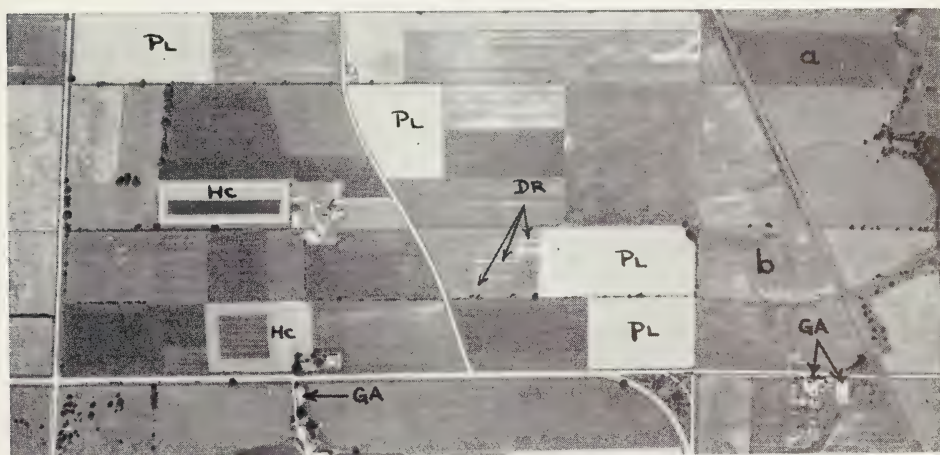
The majority of air photographs available, covering the agricultural areas of eastern Canada, have a scale of 1,320 feet to the inch (or one inch equals 15,840 inches). These photos when printed on semi-matte, double-weight, unmasked paper are ideally suited to most of the requirements of agriculture insofar as interpretation and manhandling are concerned.

Crop Identification.—The photos used in this article were taken in the St. Lawrence Lowland Region of Eastern Ontario, as part of a project carried on mainly for the purpose of analyzing the most common crops of eastern Canada from an air photographic point of view. Since the vegetative cover varies greatly from month to month during the growing season, a permanent record of how the local variations appear in an air photo would be invaluable to an

Man-made features generally contrast sharply with natural features. Owing to their ready identification and familiar character, they provide excellent subject matter for introductory practice in photo interpretation. Such items as highways, country roads, rivers, railways, fences and buildings appear rather obvious when viewed by a stereoscope. Notice that the cultivated fields (Fig. 1) are rectangular in shape indicating rather level topography, and freedom from obstructions. Since most of the land is under cultivation, one may suspect that it is a rather productive soil. The parallel drainage pattern indicates a gentle slope towards the river in the upper right of the photos.



May 30



June 30



July 30

Fig. 1 Vertical photographs of an area in the vicinity of Kinburn, Ontario, in 1952



May 30



June 30



July 30

Fig. 2 Vertical photographs of an area in the vicinity of Carp, Ontario, in 1952

Table 1.—Average Land Use on 766 Farms, Fitzroy, Huntley, March and Torbolton Townships, Carleton County, Ontario, 1951.

Item	Average per farm
Oats.....	acres 17.6
Mixed grains.....	10.2
Cultivated hay.....	32.4
Pasture.....	34.9
Other crops.....	8.8
Total improved.....	103.9
Woodland.....	35.3
Other.....	59.9
Total unimproved.....	95.2
Total, average per farm.....	199.1

air photo interpreter. Such a reference would reduce the amount of field work necessary to complete a project, and permit the uninitiated person to become a reasonably competent air photo interpreter.

Method.—Because of the month to month variations in vegetative cover of the farm lands of Ontario, during the growing season, it was decided to obtain air photos covering the area selected for study at different periods of time. The air photos presented in this article were taken in three consecutive months, May 30, June 30, and July 30, 1952.

The Area.—The flight lines selected for photographing are located in eastern Ontario about 25 miles west of the city of Ottawa. The illustrations presented are intended to cover the variety of the more common crops found in the mixed farming areas of eastern Canada.

The geology of this area is described in "Geology of the Ottawa-St. Lawrence Lowland, Ontario and Quebec"¹ as follows:

"An immense interval of unrecorded time elapsed between the withdrawal of the latest Ordovician Sea and the beginning of the glacial period, for at present the irregularly eroded surface of the Ordovician and Pre-Cambrian rocks is overlain directly by unconsolidated Pleistocene deposits of glacial till and varved clays and by marine beds of clay and sand from the post-glacial Champlain Sea".

A working knowledge of the typical farm organization and practices is essential to the interpreter. Tables 1 and 2 illustrate the typical land use program and the average kinds and numbers of livestock on farms in the Carp-Kinburn-Dunrobin area of eastern Ontario (the area photographed). Cattle form the most important enterprise on these farms followed by hogs and poultry. Cultivated hay, pasture, oats and mixed grains are the most common crops produced on the typical farm.

Table 2.—Average Livestock Complement, 766 Farms, Fitzroy, Huntley, March and Torbolton Townships, Carleton County, Ontario, 1951

Livestock	Average per farm
Horses.....	2.2
All Cattle.....	28.6
Sheep.....	4.2
Swine.....	8.8
Poultry.....	145.4

¹ Wilson, Alice E., Geology of the Ottawa-St. Lawrence Lowland, Ontario and Quebec. Geological Survey, Memoir 241, Canada Department of Resources and Development.

Identification Features.—The following crops and features are identified in Figures I and II, rough pasture (RP), improved permanent pasture (PP), rotation pasture (ROP), new seeding of hay (H₁), other hays, (H), cut hay (Hc), oats, barley and mixed grains (G), corn (C), buckwheat (BW), a partially cut grain field (GC), farm gardens (GA), deciduous trees (DE), coniferous trees (CO), trash cover (TR), watering hole (W), manured field (MA), lane (L), ploughed field (PL), ditch (D), man-made field drainage (DR), a natural field drainage pattern (indicated by solid lines), cattle on pasture (CA), spring (S), rock outcrops (enclosed by broken lines).

Hay.—In general a newly seeded hay crop photographs a rather dark gray, especially when a luxuriant growth of clover and alfalfa almost completely covers the soil. New seedings of hay generally appear darker than any other cultivated crop. The foliage of clover and alfalfa absorb the light and therefore appear to have this characteristic dark gray tone. After a year or two, much of the alfalfa and clover has died out, leaving a lighter cover of grass. Such grasses reflect light and since much of the soil may be observed, they appear to have a relatively uniform light gray tone when photographed from the air.

During the month of May a new seeding of hay appears to have a rather dark gray tone with the seeding pattern clearly visible; the stubble, straw or the position of the previous year's stooked grain often may be observed in the photo. The seeding pattern is generally more difficult to observe during late June and a relatively uniform dark gray tone then predominates. Light gray blotches often may be observed as a result of imperfect drainage, uneven seeding or a concentration of straw from the previous year's grain crop.

In contrast to newly seeded hay, second year hay has a relatively uniform dark gray tone with no evidence of a regular seeding pattern or stubble during the latter part of May and the month of June.

As a rule, hay seeded for three years or more in this area largely consists of timothy and other grasses and appears to have a light gray tone in the vertical photo with dark gray blotches in areas where alfalfa and clover have not died out. No evidence of livestock activity may be observed during the months of May or June. If such areas are pastured after harvest, it is generally not possible to differentiate them from improved pasture. Particularly weedy fields may appear mottled, especially if dandelions and other large weeds are in bloom. The older hay crops generally photograph a very light gray with a considerable amount of mottling caused by weeds.

Pasture.—Pasture may be invariably recognized in a vertical air photo by the presence of livestock and livestock markings in areas where livestock tend to assemble such as watering holes, near shade trees, or near the entrance to fields. Pastures generally have a light gray tone.

Rotation pasture during May usually has the appearance of being man-worked and a parallel "dead furrow" drainage pattern may be observed. The dark gray blotches which appear in these fields indicate the uneven grazing around weeds, stones and livestock droppings. The over-all pattern does not change greatly during June or July.

Rough pasture generally has the characteristic light gray tone of rotation pasture during the month of May but may be readily recognized by the generally rough topography, shallow soils, the absence of cultivation patterns and the blotchy effects of random tree growth, weeds, stumps, stones, paths, etc. Very often such pastures exhibit considerable evidence of erosion. During June the tonal qualities of such pastures in an air photo do not usually change very greatly. However, during July these pastures ordinarily have a very light gray appearance as they generally have dried up as a result of insufficient moisture, overgrazing, or both.

During the month of May, improved permanent pasture, i.e. intensively pastured fields seeded with a special pasture mixture, is very similar in tonal qualities to a field of alfalfa and clover. Such fields generally have a rather dark gray tone but may be readily differentiated by the following characteristics. They generally have the blotchy appearance of uneven grazing; signs of livestock activity or the livestock themselves may be observed; and these pastures are generally located fairly close to the farm buildings. They retain the same over-all pattern during June and July but appear a lighter gray during the latter part of June and the month of July.

Grain.—Grain crops may best be recognized in a vertical air photo during the latter part of June and the month of July. These crops are generally seeded in late May or early June and signs of growth are not too visible from the air for several weeks. Since most crops, other than grain are already seeded and in an advanced state of growth at the end of May one may deduce, from typical cropping practices, that most of the land which is ploughed, disked or both, will be seeded to oats, barley, mixed grain, fall wheat, corn or to buckwheat. The smooth surface of cultivated land is a good reflector of light and usually appears in a very light tone and is therefore readily recognizable.

At the end of June such crops as oats, barley, mixed grain or wheat are about 8 to 14 inches in height. The seeding pattern of the rowed grain may be easily observed as the foliage is not sufficient to cover the soil between the rows and the tone is generally lighter gray than a field of cultivated hay. Furrow ditches may be observed at regular intervals throughout these fields and there are no indications of livestock activity. The appearance of these grain crops at the end of July varies with their stage of maturity; ripened grain appears a very light gray whereas the tone of immature grain is slightly darker. The seeding pattern may still be readily recognized. Quite often a field of grain does not mature evenly throughout, because of differences in drainage, and may appear to have streaks of very light to medium grays. It is not possible to identify whether the grain crop is oats, barley, mixed grain or fall wheat. A knowledge of the typical farm organization in the area may be very valuable in estimating the approximate acreage in these crops, once the total acreage of all coarse grains is known. Buckwheat may be recognized about the end of July by a uniform medium to light gray tone which is lighter than hay and slightly darker than fields of grain.

Ensilage corn or grain corn may not be recognized until the latter part of June when the grain is several inches high. The characteristic pattern of cultivated corn may be observed as there is a sharp contrast to the dark gray of the corn and the whitish gray tone of the cultivated soil. During the latter part of July, corn appears an almost black tone with the rows still visible and is, as a rule, darker than the surrounding fields. The relief of a corn field is higher than the surrounding fields of grain and hay during July and August.

Conclusions.—Combinations of various tones establish definite patterns which become the key to identification by tone. The typical dark, almost black tone of alfalfa or clover is readily recognizable during May or June. Improved pasture generally has a medium gray tone and rough pasture a relatively light gray appearance during the major part of the summer.

It is not usually possible to differentiate between oats, barley, mixed grain or wheat using standard photos and the lens-type of stereoscope. These crops may be recognized as "grain" at any time after the middle of June. Corn may be easily recognized any time after the middle of July. The characteristic white tones of buckwheat in bloom will identify this crop in the latter part of July. The regular pattern of orchard crops permits one to identify them at any time during the growing season.

CONSUMER ACCEPTANCE OF ONTARIO FRESH MARKET PEACHES

J. M. FITZPATRICK

Years of research have enabled peach growers to increase yields and improve the quality of the product. Information is available on many cultural and management practices for peach farms but little is known about what happens to peaches after they leave the farm. In many cases, even the grower has no knowledge of where the peaches are to be shipped or how long they will remain in marketing channels.

In 1954, the Economics Division obtained information from consumers concerning the quality of peaches purchased and their satisfaction or lack of satisfaction with this fruit. The results of this study are presented as an aid in maintaining a consistently high grade peach pack.

At the time of peach packing, 3,000 mail questionnaire cards were placed in baskets of peaches packed in farm packing houses in the Niagara and Leamington areas of Ontario. The actual date of packing was stamped in code on the cards during the morning of the day peaches were to be placed in baskets. In order to make certain that the questionnaire cards reached the consumer, the packer was requested to pack one row of peaches in a six quart basket, insert the collar, place the card next to the collar just under the handle and then continue packing peaches in the usual manner. The baskets were loaned after packing, which made it difficult for the card inside to become lost. Housewives were requested to indicate the date of purchase, quality at time of purchase, the quantity found unfit for consumption and the date when the last peaches were used.

From the survey data it was found that the number of days housewives kept peaches in the home decreased as the time between packing and purchasing increased. On the average, 63 per cent of the peaches were purchased within three days of packing and were kept another four days before being used. Seventeen per cent of the fruit was six days old when purchased and kept three days while the remaining fruit which was purchased seven days or more after packing was used within two days. Seventy per cent of the fruit purchased within one day of packing was considered nicely ripened (Table 1) but only about 55 per cent of the fruit purchased two days or more after packing was so considered. Frequently, some of these peaches were too green while others were overripe.

Under present marketing practices there seems to be a limit of about nine days on the time that peaches will keep after picking. Even this period depends on fruit being picked so green that satisfactory ripening in baskets does not always occur. Experiments at the Vineland Experiment Station show that firm, ripe peaches, properly chilled will keep from two to three weeks. Thus there is a need for refrigeration facilities between picking and purchasing depots unless peaches are to reach the consumer within three days of picking.

Table 1.—Relation of Packing-Purchasing Time to Peach Quality According to Ontario Housewives

Days required from packing to purchasing	No. of cards returned	Quality at time of purchase			
		Nicely ripen. d	Green	Over-ripe	Some over-ripe, others too green
		per cent	per cent	per cent	per cent
1 day or less.....	24	78.3	13.0	0	8.7
2-3.....	23	52.2	13.0	8.7	26.1
3-4.....	36	58.3	5.5	13.9	22.3
4 days or over.....	48	58.3	18.7	4.2	18.8
Average.....		60.8	13.1	6.9	19.2

The distance peaches travelled influenced the time in marketing channels and consequently the number of days housewives were able to keep the fruit. Peaches from the Niagara and Leamington areas travelled as far east as Halifax and as far west as Sault Ste. Marie. The average distance covered was 421 miles (Table 2). Peaches travelling less than 100 miles were purchased in about two days and were kept almost six days after packing. Peaches travelling 500 miles or over were purchased in five days after packing and kept for another three days before being used.

Table 2.—Relation of Distance Travelled to Time from Packing to Purchasing and from Packing until the Last Peaches were Used

Distance Travelled ^a		Percentage of cards returned	Time lapse from packing to purchasing	Time lapse from packing until peaches were used
Range	Average			
miles	miles	per cent	days	days
0—65.....	65	26.3	2.4	5.8
100—399.....	259	20.9	3.1	6.7
400—500.....	463	32.6	3.6	7.5
500 and over.....	948	20.2	5.0	7.6
Average.....	421	100.0	3.5	6.9

^a Road mileage was calculated for all records except those from New Brunswick and Nova Scotia where rail mileage was taken.

One quarter of the housewives in this study reported a considerable quantity of peaches purchased unfit for use. Part of this spoilage was due to the distance peaches travel and the time lapse between packing and purchasing. Part of the spoilage was also due to the presence of brown rot on peaches at packing time. Table 3 gives the results of a comparison made between fruit packed relatively free of brown rot and fruit packed on farms where brown rot was suspected. When brown rot was not noticeable, 63 per cent of the baskets of peaches were considered nicely ripened at the time of purchase and most of the peaches in 84 per cent of these baskets were fit for consumption. On the other hand, when brown rot was noticeable at packing time housewives classified only 50 per cent of the baskets of peaches as nicely ripened. In these baskets only 55 per cent of the peaches could be used. It is important, therefore, to have all peaches showing signs of brown rot removed before packing to make certain that only the best fruit reaches the consumer.

Table 3.—Relation of Brown Rot to Peach Quality According to Ontario Housewives

	Baskets showing no evidence of brown rot at packing time	Baskets showing evidence of brown rot at packing time
per cent		
Quality at time of purchase		
Fruit nicely ripened.....	63.0	50.0
Fruit green.....	6.5	45.5
Fruit overripe.....	8.3	—
Some overripe; others too green.....	22.2	4.5
Total.....	100.0	100.0
Quantity fit for consumption		
Most of the peaches in baskets.....	83.5	54.6
Few of the peaches in baskets.....	16.5	45.4
Total.....	100.0	100.0

SIGNIFICANCE OF LOCKER PLANTS IN FOOD MARKETING

L. E. DRAYTON

There are over 1,200 frozen food locker plants in Canada with storage capacity for at least $2\frac{1}{2}$ million cubic feet of frozen foods. It is reasonable to expect that these facilities would have some effect on food marketing patterns.

Nature of Locker Plants.—A frozen food locker plant is a specialized cold storage warehouse. Its essential part is a room designed to store frozen foods in individual lockers rented to the general public. The frozen food stored in these lockers is owned by the family who rents the lockers. Originally the locker plant operator had nothing to do with this food as the locker renter placed what food he pleased in his locker and removed it when he pleased.

However, in most locker plants today, the locker plant operator provides a variety of food handling services. In five provinces with a total of 1,100 locker plants, he is required by law to inspect food brought into the locker plant and to make sure that no unwrapped or unfrozen food, or food not intended for human consumption is placed in any locker. Compliance with these regulations makes necessary provision of facilities for freezing food in a separate room or cabinet and of the service of moving such food to the locker when frozen. Where these requirements are enforced almost all locker plant operators provide such services as buying, chilling, aging, cutting and wrapping of fresh meats and supply containers for fresh fruits and vegetables. Many locker plant operators also provide slaughtering, meat curing and lard rendering services. These various services entail the addition of meat chilling, cutting and curing rooms to the basic locker plant unit. Some locker plants provide facilities for preparation either by their staff or by patrons of fruit and vegetables for freezing.

Most locker plants are associated with some other type of business. Where services are limited to frozen food storage this is likely to be a dairy plant, ice plant, or a cold storage warehousing business. In those locker plants which offer a wide range of food handling and processing services the association is more likely to be with food retailing. Many locker plant operators distribute home freezers and more offer the frozen food services required by home freezer owners.

Table 1.—Distribution of Locker Plants in Relation to Total Population in Canada, by Provinces, 1953

Province	Locker Plants	Population per Plant
	number	persons
British.....	124	9,900
Alberta.....	153	6,500
Saskatchewan.....	211	4,100
Manitoba.....	103	8,000
Ontario.....	519	9,400
Quebec.....	82a	55,500
New Brunswick.....	9	60,000
Nova Scotia.....	9	74,000
Prince Edward Island.....	9	12,000
Newfoundland.....	3	127,000
	1,222	

^a Includes 47 cold storage fish warehouses each of which have a few lockers installed.

Distribution of Locker Plants.—Over 1,100 of Canada's 1,200 locker plants are in Ontario and the four western provinces (Table 1). Ontario has over 40 per cent of these locker plants but the concentration of such businesses in relation to population is much greater in the three Prairie Provinces, especially Saskatchewan.

However, the concentration of locker plant services in relation to total population is somewhat misleading. A much larger proportion of farm families than of urban families use locker plant facilities. Consequently, locker plants are generally located in country trading centres rather than in large cities as such. Even though all the larger cities have at least one locker plant, many of the urban locker plants depend largely on farm trade for their business. However, even at a country point a locker plant is likely to serve some non-farm families.

In Ontario, the distribution of locker plants according to the density of either the farm or the total population is quite uneven. Very heavy concentrations of locker plant services are found in some counties northwest and southwest of Toronto. In other areas in Ontario locker plants are quite scattered. The distribution of locker plants in relation to either total or rural population in the Prairie Provinces, is much more uniform than in Ontario and expansion of the industry into new districts continues.

Despite the low concentration of locker services present indications are that there will not be a large expansion of the locker plant industry in the Atlantic Provinces and Quebec.

Volume of Food Handled.—Data on the actual volume of food stored in locker plants are available only for Alberta and Saskatchewan. In these two provinces locker plants stored over 36 million pounds of frozen foods in 1952 and again in 1953. As there are 364 locker plants in these two provinces this amounts to 100,000 pounds per locker plant. If other locker plants across Canada store similar volumes of food the quantity of frozen food passing through Canadian locker plants each year is over 120 million pounds.

Most of this food is meat. In Alberta 84 per cent of the food processed or stored by locker plants in 1953 was meat. The corresponding figure for Saskatchewan was 90 per cent. It is quite probable that the handling of meat does not dominate the locker plant industry to the same extent in other provinces. However, visits to locker plants in fruit and vegetable growing areas of Ontario indicated that even there, well over 50 per cent of the food stored in locker plants was meat. Accordingly, it is estimated that Canadian locker plants store over 90 million pounds of meat each year.

Significance in Meat Marketing.—To evaluate the significance of locker plant operations in meat marketing it is first necessary to compare the 90 million pounds of meat stored in locker plants with total Canadian consumption, which exceeded two billion pounds in 1953. Even though the volume of meat handled by locker plants is substantial it represents less than five per cent of Canadian meat consumption.

The development of the locker plant industry has not led to a diversion from normal marketing channels of five per cent of the meat which would otherwise have passed through them. Much of the meat handled by locker plants would never have entered these channels in any event. It is a well established custom for farmers to slaughter livestock for their own consumption. They have long resorted to oat bin storage, home curing, home canning, sharing in beef rings and other devices to overcome the problems of having excessive supplies of fresh meat on hand at one time. Many farmers have found the use of locker plant facilities a more satisfactory solution to these

problems than any of the devices used earlier. Thus, to a considerable extent the use of locker plant facilities has been an alternative to home storage or preservation of home produced meat.

It is, of course, true that a considerable portion of the meat stored in most locker plants is purchased and re-sold by the locker plant operator. Although some of this meat may be bought from farmers who wish to store only part of the meat when they have a steer butchered, most of it is bought from packing plants. So far as business with the packing plant is concerned the locker plant operator is simply another customer. Some locker plant operators seek and take advantage of opportunities to buy volume lots of certain types of carcasses or front or hind quarters at especially favorable prices. Such bargain hunting by locker plant operators is not sufficiently general to have had any significant impact on meat marketing practices. After all it is limited by the ability of the locker operator to resell the meat to his customers. At any given time a large proportion of these customers may have a considerable quantity of meat in lockers and not be interested in buying more. Moreover, if a locker operator persuades his customers to fill their lockers with what appears to be a "good buy" and subsequently meat prices generally decline, there may be considerable dissatisfaction.

Significance in Marketing Other Foods.—Locker plants handle from four to five per cent of the meat consumed in Canada. However, they probably handle a smaller proportion of any other basic group of foods. It is unlikely that the quantity of all other foods stored in Canadian locker plants in any recent year has exceeded 30 million pounds or two pounds per person.

Again, a large proportion of such food is produced by the family who stores it. A few locker plant operators purchase some fresh fruits for their customers, to have frozen and stored in the locker plant, and most operators do retail frozen fruits and vegetables. Except where a considerable number of home freezer owners are served, efforts of locker plant operators to make bulk or volume sales of frozen fruits and vegetables have seldom proven successful.

A substantial volume of poultry is stored in locker plants and the bulk of this is home produced. A large portion of the fish stored in locker plants has never entered marketing channels. However, some locker plant operators have promoted the sale of frozen fish to their customers.

INTERDEPARTMENTAL FAO COMMITTEE

Dr. J. F. Booth, Chief, Economics Division, Marketing Service, has been appointed Chairman of the Canadian Interdepartmental Food and Agriculture Organization Committee. He has also been named Liaison Officer with FAO, to replace Dr. S. C. Hudson who has accepted a technical assignment in Egypt with FAO for a one-year period.

WORLD TRADE

In an address to the Canadian Manufacturers' Association on May 25, 1955 the Minister of Trade and Commerce had the following comments to make on the liberalization of world trade:

... steady pressure for liberalization of international trade contributes to a steady rate of economic growth. This might seem a self-evident truth. But I regret to say that there are those in all countries who would turn back the clock towards restrictionism whenever the going gets a bit rough . . . There must be steady pressure in the direction of more trade if the best results are to be attained . . .

Now that dollar shortages are fast disappearing and competition is re-asserting itself on a world-wide scale, the GATT is, in a sense, getting its first test. And the evidence suggests to me that it is standing up pretty well. The member countries are not resorting on a broad scale to their rights to withdraw tariff concessions granted in the postwar period. Quantitative restrictions and discrimination are, in fact, being removed by countries as they get out of dollar difficulties, perhaps not as quickly as we would wish, but nevertheless they are being removed fairly steadily . . . I am convinced that in most of the principal trading countries there is today a strong bias in favour of the kind of trade rules that the Government of Canada has been advocating. There is no reason for pessimism about world trade prospects. On the contrary, I believe a solid foundation has been laid for further progress. We may have a long way to go, but in my opinion, we are moving forward, not retreating. . .

We, in Canada, are aware that the strength and unity of the free world depend, more than anything else, upon a sound foundation of multilateral trade arrangements. The events of the past ten years have confronted all countries with temptations to pursue trade policies which would be attractive enough in the short run but which would only lead to trouble. Some countries have dabbled with high tariff protection, others with exchange controls and discriminatory restrictions. In all cases these misguided efforts have reacted against the countries which initiated them . . . individual countries cannot afford to weaken their productive efficiency by policies of high protection. In terms of peace and security the free world is not strong enough to endure the international bickering and disunity which would accompany the growth of barriers to trade.

COMPARATIVE COSTS OF FURROW AND SPRINKLER IRRIGATION OF TREE FRUITS IN THE OKANAGAN VALLEY

G. C. FERRIES AND J. C. WILCOX¹

Orchardists, especially those who wish to install new furrow or sprinkler irrigation systems or adjust old ones, need data on the comparative costs of these two systems. To provide these data the Economics Division in 1951 conducted a study of furrow and sprinkler irrigation in the Okanagan Valley of British Columbia. This article will present some of the data gathered on relative costs of the two systems.

Description of Systems.—In a furrow irrigation system water is usually conveyed by means of open flumes. They are made in various sizes, of lumber or galvanized metal, and laid on wooden trestles six inches to two feet off the ground. Wooden flumes are either rectangular or “V” shaped whereas the metal ones are shaped in a half circle. The flumes are ‘gated’ about every three feet to permit the water to run into furrows. Concrete flumes are also used but they were found on only a few of the farms included in the study.

Some orchardists use underground pipes instead of flumes, or to supplement a fluming system. Standpipes placed at convenient intervals along the underground line protrude above the ground about a foot and are generally placed near a tree in order to avoid striking them with orchard machinery. Taps permit the water to flow into the furrows which distribute it throughout the orchard.

The type of sprinkler system found in this survey consisted, for the most part, of an underground main line feeding into above-ground portable lateral lines on which the sprinklers are placed. The main lines consist of iron or steel pipes, with hydrants spaced from 90 to 150 feet apart along them. The hydrants protrude about one foot above ground. They are equipped with valves to allow water to run into portable lateral lines which are moved from one hydrant to the next. For orchard use the lateral lines consist of 20 and

¹ J. C. Wilcox, Agricultural Research Officer, Summerland Experimental Station, B.C.

30-foot lengths of two-inch aluminum tubing connected by quick couplers. The couplers have an opening for a 'riser' on which is placed a revolving type of sprinkler head. Nearly all the systems had screening arrangements to prevent foreign material such as algae from plugging the sprinkler nozzles.

Sprinkler systems differ from furrow systems in that water pressure is required for their operation. Pressure is supplied either by means of gravity or by a pump and motor. In some cases the pressure is supplied by the irrigation district.

Use of Different Systems and Materials.—The average investment per acre was higher for the sprinkler than for the furrow systems (Table 1). There was, likewise, an appreciable difference in average investment per acre for orchards with a sprinkler system operated by gravity and those with a pump-sprinkler system—\$131 for the gravity compared with \$168 for the pump system and \$114 for furrow irrigation. Orchardists located in areas where gravity can be used to operate a sprinkler are thus more fortunate than those who have to install a pump.

The costs of furrow irrigation were calculated for the systems in actual use and these systems were all assumed to be in first class condition. The orchardists used a combination of materials for the supply and/or the distribution part of their systems, including underground pipes (with standpipes), flumes, and some earth ditches. The flumes were made of galvanized iron, wood (both rectangular and "V"), and concrete.

Table 1.—Comparative Figures on Furrow and Sprinkler Irrigation Systems, Okanagan Valley Orchards, 1951

	Unit	Type of Irrigation		
		Furrow	Sprinkler	
			Gravity	Pump
Number of Orchards.....		16	20	10
Average Size.....	Acres.....	10.2	13.1	13.8
Average Investment per Acre.....	Dollars.....	114	131	168
Average Annual Cost per Acre ^a	Dollars.....	30	22	30
Man Labor—per Acre.....	Hours.....	22.0	11.4	13.3
Machine Use—per Acre.....	Hours.....	1.1	0.5	0.2

^a Excluding cost of water.

The average total costs of furrow irrigation systems were then calculated on the assumption that each water carrier was all of one kind of material. The types of equipment considered were underground pipe (with standpipes), galvanized metal flume, wooden rectangular flume, and wooden "V" flume.

Replacement costs varied from \$103 to \$136 per acre depending on the type of material used (Table 2). In order to determine the most economical kind of material to use for a furrow irrigation system on a long term basis, it was necessary to compare the costs of each for the same length of time. Over a period of thirty years the average replacement costs per acre for the different kinds of material were as follows:

Underground pipe	\$238
Galvanized metal flume.....	\$113
Wooden rectangular flume.....	\$340
Wooden "V" flume.....	\$309

Therefore, because of its longer estimated life the galvanized metal fluming was the least expensive. With the use of the metal flumes there was also a saving in annual operating costs. Wooden "V" flumes last for only ten years and

Table 2.—Average Total Replacement and Annual Costs, 16 Furrow Irrigation Systems, Okanagan Valley Orchards, 1951

Kinds of Material	Average Replacement Cost per Acre	Average Annual Cost per Acre ^a	Estimated Life
	—dollars—	—dollars—	—years—
Underground Pipe.....	135	31	17
Galvanized Metal Flume.....	113	27	30
Wooden Rectangular Flume.....	136	34	12
Wooden "V" Flume.....	103	32	10

^a Excluding cost of water.

have to be replaced three times in the 30-year period whereas the metal flumes may have to be replaced only at the end of that period. Consequently, the annual costs per acre were higher for "V" shaped wooden flumes than for galvanized metal flumes.

The difference noted above in total replacement costs over a 30-year period accounts for most of the difference in annual cost of operating furrow systems built of various types of materials. Interest on investment is, of course, lowest on those systems with smallest initial outlay but can only partially offset the differences noted in depreciation cost. There would probably be a little more expense for repairs to the wooden flumes than for repairs to the galvanized flumes or underground pipes. The cost of labor for irrigation would be practically the same regardless of the kind of material used for carrying water.

Comparison with Sprinkler Systems.—The replacement cost for a complete gravity sprinkler system was \$131 per acre, with an over-all life expectancy of 15.7 years. Thus, the renewal cost of a gravity sprinkler system over a 30-year period would be \$250 per acre compared with \$113 for a galvanized metal flume system. A pump sprinkler system would entail added costs for the pumping equipment.

Labor.—The amount of labor spent with furrow irrigation was almost twice that spent with sprinkler irrigation. Sprinklers should require attention only for moving the laterals whereas furrows often call for considerable supervision, in order to assure proper use and control of the water.

The amount of labor spent per day of actual irrigation on the three types of systems averaged 3.3, 1.9 and 2.0 man-hours for furrow, gravity sprinkler and pump sprinkler, respectively.

As a result of the reduced labor cost sprinkler systems compare favorably with furrow in annual costs, despite the higher replacement costs. The annual cost of operation of furrow systems and pump sprinkler systems both averaged \$30 per acre compared with \$22 per acre for gravity sprinkler systems. With the pump systems the higher annual cost resulted from the cost of power and the charges for depreciation and interest based on the high replacement cost.

The higher overhead costs of a gravity sprinkler system are more than offset in the long run by the lower operating costs, which is mainly attributable to the lower labor requirements. It therefore appears that the gravity sprinkler system is the least expensive in the long run.

However, even if a gravity sprinkler system appears to be the more economical in the long run, a little more capital is required at the outset and this may be an important consideration on some orchards, and particularly on the large ones.

Quantity of Water Used.—The acre-inch is the unit of measurement used for determining the quantity of water applied to the soil for irrigation.¹ In this study costs were not calculated on a per acre-inch basis for two reasons: first, orchardists of the Okanagan Valley think of costs in terms of "per acre" rather than "per acre-inch"; second, the quantity of water used for furrow irrigation could not be measured.

However, some figures are given in the following paragraph on the quantity of water applied by sprinkling, and on replacement and operating costs on a per acre-inch basis.

For all the 33 adjusted sprinkler systems, the average depth of water applied during the season was 26.7 inches. The depth of application was 29.7 inches for the 26 farms having a coarse to medium light soil, and 18.2 inches for the seven farms on medium heavy to heavy soils. The average total replacement cost was \$4.94 per acre-inch of water applied by those sprinkler systems. The average total annual cost (including water) was \$1.39 per acre-inch. The amount of time spent on irrigation averaged 0.46 man-hour per acre-inch per year.

All growers claimed that they saved water when they changed from furrow to sprinkler irrigation. Their estimates of the saving varied from ten to 66 per cent with an over-all average estimate of 32 per cent.

Relative Merits on Bases Other than Costs.—The effects of factors, other than costs, which may influence the use of either furrow or sprinkler irrigation systems, are described below.

Soil Texture.—There was a tendency for orchardists to use sprinkler rather than furrow irrigation on the light textured soils because sprinkler irrigation allows better control of soil erosion, more adequate wetting of the soil and less waste of water.

Topography.—A much higher proportion of sprinkler than furrow irrigation was used on undulating land. With sprinklers it was possible to irrigate areas that would otherwise be very difficult to cover, and there was a better distribution and better control of the water on rolling terrain.

Shape and Size of Farm.—There was no indication that the shape or size of an orchard exerted any influence on the operator's choice between a furrow and a sprinkler irrigation system.

Quality and Availability of Labor.—The orchardists who hired labor found it exceedingly difficult to secure someone willing and capable to handle furrow irrigation systems. For that reason, many growers favored the use of sprinkler systems, since labor was needed only to move the lateral lines, instead of adjusting and controlling the flow of water as with furrow systems.

THE EFFECTS OF BEEF QUALITY ON PRICES IN THE TORONTO AREA—1954

G. E. WOOLLAM AND K. E. CANN

Findings made through a series of price studies² in Toronto during 1954 indicate that the wide difference in retail prices of beef are mainly attributable to the quality of meat sold. Additional factors are the yield of beef and the supply of animals in the various quality classifications of cattle. An examination of prices at the three marketing stages shows that, for the most part, the differences in live prices for these various qualities of cattle are reflected in both wholesale and retail prices.

¹ An acre-inch of water is the amount of water necessary to cover one acre to a depth of one inch.

² These price studies were conducted jointly by the Live Stock and Economics Divisions of the Department of Agriculture.

For each quarter of 1954, prices were collected for various qualities of beef at retail and wholesale and for live animals. In Table 1 the price of good steers and the corresponding grade of beef is used as a base and each of the other qualities of beef sold is expressed as a difference in cents per pound from this base.

The extent of the variation in prices among the various qualities is determined to some extent by the availability of supplies of the different classes of cattle. For instance, an increase in the number of commercial quality carcasses available relative to the number of the high quality carcasses will cause the price differential to widen. As a result of the cattle marketing pattern there will be a seasonal element in the price differences for various qualities of cattle.

Another important aspect of this problem of quality price differentials is the carcass yield from the live animal. The dressing percentage for choice and good steers is likely to average about 56 per cent whereas the lower quality

Table 1.—Differences in Prices Among Six Qualities of Beef and Classifications of Cattle—January, April, July and October—Toronto, 1954.

Description	Retail price		Wholesale Carcass Price	Live Cattle Price
	Higher Priced Cuts	Lower Priced Cuts		
	—cents per lb.—			\$ per cwt.
January—				
Good steers (price).....	73	47	36	18.31
Medium steers.....	+1	-2	-2	-0.81
Common steers.....	-6	-6	-7	-3.81
Good cows.....	-15	-10	-12	-6.81
Medium cows.....	-27	-14	-15	-8.06
April—				
Good steers (price).....	69	42	34	18.50
Medium steers.....	-2	0	-2.5	-1.50
Common steers.....	-8	-5	-5	-4.83
Good cows.....	-13	-7	-6.5	-6.00
Medium cows.....	-20	-13	-8	-7.00
July—				
Good steers (price).....	76	46	40	20.50
Medium steers.....	-1	-1	-2.5	-1.00
Common steers.....	-9	-7	-5	-4.00
Good cows.....	-16	-11	-11.5	-7.28
Medium cows.....	-27	-13	-13	-8.31
October—				
Good steers (price).....	77	45	41	21.00
Medium steers.....	-2	-1	-8	-1.48
Common steers.....	-15	-7	-11	-6.18
Good cows.....	-17	-9	-16	-10.50
Medium cows.....	-31	-12	-18	-11.25

commercial cattle may yield as low as 48 per cent. During April, 1954 (Table 1) the price spread between live good steers and good cows was \$6.00 per hundredweight of which approximately \$2.50 of this spread could be accounted for by the difference in dressing percentages. The remaining \$3.50 is associated with quality and demand-supply relationships. By October, the spread between these two classifications of cattle had increased to \$10.50 per hundredweight with difference in yield accounting for about \$3.00. Marketings of the better qualities of cattle had fallen from April levels and supplies of the lower grade commercial cattle had increased substantially causing the spread attributable to quality and supply-demand relationships to increase to \$7.50 per hundredweight.

Retailers of meat, in their operations, are necessarily conscious of consumers' reaction to quality and price and this is reflected in the purchasing policy of the retailer. Because there is not sufficient top grade beef to meet total consumer needs, the price mechanism must operate in a manner that will move the supplies of the various qualities of meat into consumption. This manifests itself in the form of differences in the prices for various qualities which differences will increase or decrease according to the supplies of quality on hand and the responsiveness of consumers to the price variation.

ORGANIZATION FEATURES OF FARMS ON LIGHT, MEDIUM AND HEAVY TEXTURED SOILS IN THE PRAIRIE AREA OF SASKATCHEWAN

H. L. BIEHN

This article reviews some of the differences in farm organization in three areas of differing productivity in Saskatchewan. These areas include a Land Class II area¹, a Weyburn loam area² and a Regina heavy clay area³. These three areas are predominantly light, medium and heavy textured soils, respectively. The Land Class II area is considered marginal for wheat production whereas the Weyburn loam area has about 32.4 per cent of its land and the Regina heavy clay area 78.5 per cent of its land rated as suitable for wheat production (Land Classes III, IV and V).

Land Ownership.—In the Weyburn loam and the Regina clay areas⁴ 90 per cent of the land was individually owned, compared with 64 per cent in the Class II area. Almost all of the remaining 36 per cent of the land in the Class II area was publicly owned. There was very little land under company ownership in any of the areas.

Table 1.—Farm Tenure in Three Selected Saskatchewan Areas

Tenure	Land Class II Area	Weyburn loam area	Regina clay area
	—per cent of farms—		
Fully owned.....	37	55	50
Partly owned.....	54	27	26
Fully rented.....	9	18	24
Number of farms.....	644	550	767

Farm Tenure.—A higher percentage of the farmers were part owners in the Land Class II than in either the Weyburn loam or the Regina clay area. Some farmers in the Land Class II area, finding it hard to make a living on lands of low productivity, had increased the size of their holdings by renting or leasing both arable and grazing land. This was made possible by a considerable withdrawal of settlers in the "thirties" and subsequent periods. An added complexity with regard to tenure springs from the fact that in the Land Class II area, 12 per cent of the present operators own, rent and lease some of their present farm unit. Moreover, farmers in the Land Class II areas generally have easier access to P.F.R.A. community pastures than farmers in the other two areas (Table 1).

¹H. L. Biehn and M. Ragush. *Farm Organization, Progress and Adjustments on Land Class II, Brown and Dark Brown Soil Zones, Saskatchewan, 1952-53*. Economics Division. Unpublished.

² and ³ M. Ragush and F. F. Cline, *Farm Practices in the Weyburn Loam and Regina Heavy Clay Soils of Saskatchewan, 1951*. Mimeographed Report. Economics Division, Canada Department of Agriculture.

⁴This area, which is predominantly Regina heavy clay soil, will be referred to as the Regina clay area.

It is probable that the rather large number of farmers who do not own any land in the Weyburn loam area and Regina clay area may be due to high land prices and the competition of other factors for available capital.

Farm Size.—Most of the farms in the Weyburn loam and Regina clay areas are two to five quarter sections in size. In the Land Class II area, most of the farms are two to six quarter sections, but the number of farms larger than nine quarter sections is much greater than in either the Weyburn loam or Regina clay area. The most common size of farm is one-half section in the Regina clay area, one-half and three-quarter sections in the Weyburn loam area, and one section in the light textured soil group of the Land Class II area.

Land Utilization.—The average farm size in the Land Class II area was 874 acres as compared with 605 acres in the Weyburn loam area and 783 acres for farms in the Regina clay area. Of these acreages, 66 per cent was improved on the farms in the Land Class II area, 76 per cent on the farms on the Weyburn loam soils and 99 per cent on the farms on the Regina clay soils.

Table 2.—Land Utilization in Three Selected Saskatchewan Areas.

Utilization of land	Land Class II Area	Weyburn loam area	Regina clay area
—average acreage per farm—			
Total size.....	874	605	783
Total improved.....	574	460	776
Wheat on summerfallow.....	174	152	262
Wheat on stubble.....	74	53	200
Oats on summerfallow.....		7	3
Oats on stubble.....	44	66	11
Barley on summerfallow.....		1	1
Barley on stubble.....	34	14	7
Other crops.....	40	9	6
Summerfallow.....	204	151	266
Farmstead.....	7	7	10
Total unimproved ¹	300	145	7

¹ Native pasture, unused land, and leased grazing.

The proportion of unimproved land reflects the number of livestock carried on farms in the various areas. It should be noted that the unimproved acreage on the Weyburn loam farms was predominantly land definitely unsuitable for cultivation, whereas on the Land Class II farms it was land that could have been cultivated but the operators felt it undesirable to cultivate any more.

Wheat was the main crop in all areas, but the proportion of improved land used for this purpose in each of the areas varies from a high of 60 per cent on the Regina clay farms to a low of 43 per cent on the Land Class II areas. The proportion of total wheat acreage on stubble land was: 43 per cent on the Regina clay farms, 26 per cent on the Weyburn loam farms and 30 per cent on the Land Class II farms (Table 2).

Livestock.—Livestock numbers were highest on Land Class II farms with the Weyburn loam farms ranking next and the Regina clay farms reporting the lowest number. Cattle made up the largest part of the livestock. The low numbers of hogs and poultry indicate that they were kept mainly for home use in all three areas. Horses were not used to any extent for field work by any of the farmers interviewed, although the majority of farmers in the Land Class II and the Weyburn loam areas had at least two horses which were used for haying, winter transportation or other odd jobs around the farm.

Cattle numbers showed a close relationship to the carrying capacity of the unimproved land available for grazing. The farms on Land Class II averaged

300 acres of unimproved land and 19.9 head of cattle. The Weyburn loam farms averaged 145 acres of unimproved land and 15.5 head of cattle, whereas the Regina clay farms averaged 7 acres of unimproved land and 3.2 head of cattle. Forty-six per cent of the farmers interviewed on the Regina clay farms had no cattle, compared with 11.8 per cent on the Weyburn loam farms and 19 per cent on the Land Class II farms. Of the farms with cattle, most of those on Land Class II had from 11 to 20 head, whereas most of the Weyburn loam farms had from 6 to 30 head and the Regina clay farms had less than 6 head (Table 3).

Observations.—Taking lands graded Land Classes III, IV and V as suitable for wheat production, 78.5 per cent of the land in the Regina clay area, 32.4 per cent in the Weyburn loam area and none in the Land Class II area come within this classification. One would expect to find significant differences in farm organization on land of such varying productivity.

Table 3.—Cattle Numbers in Three Selected Saskatchewan Areas.

Number of cattle	Land Class II area	Weyburn loam area	Regina heavy clay
	—per cent of farms—		
None.....	19	12	46
1 to 5.....	10	11	37
6 to 10.....	12	21	8
11 to 20.....	22	25	6
21 to 30.....	15	22	3
Over 30.....	22	9	0

Some noticeable differences which appear to be related to suitability for wheat production were found among the three areas. The relatively high proportion of farms in the Land Class II area which were partly-owned and partly-rented or leased undoubtedly was influenced by the combination of farm units as farmer operators discontinued farming and by the availability of grazing land on lease-hold. In the Regina and Weyburn areas farms available for rental were more likely to be rented by operators who did not own any land, and there was less grazing land available under lease agreements.

It is apparent from available information on land utilization that most farmers have turned their land to the best use as far as productivity and returns are concerned.

PUBLICATIONS OF THE ECONOMICS DIVISION

Canadian Agriculture in 1954. A Chronology of Federal Policies. Dunbabin, Margaret I. February, 1955. pp. 36.

A chronological record of "changes in federal policies affecting agriculture and events of importance in connection with such policies."

UNITED NATIONS PUBLICATIONS

Available from: Sales and Circulation Section, Dept. of Public Information, United Nations, New York, U.S.A.

In Canada: The Ryerson Press, 299 Queen St. West, Toronto; and Periodica Inc., 5112 Ave. Papineau, Montreal, 34.

Economic Survey of Europe in 1954 including Studies of Regional Problems in European Countries and The Structure of the French Economy. Prepared by the Research and Planning Division, Economic Commission for Europe. Geneva, 1955. pp. xii plus 315.

The eighth in a series of annual reports, *The Survey* combines an analysis of major economic developments in the past year with considerations of some longer-term issues. The first five chapters discuss recent economic events under the following headings: *The Economic Upswing in Western Europe and its Background*; *Recent Changes in the Economics of Eastern Europe*; *Economic Development in the Soviet Union*; *Trade and Payments of Western Europe*; and *Foreign Trade of Eastern Europe and the Soviet Union*. Chapter 6 discusses the *Problems of Regional Development and Industrial Location in Europe* and Chapter 7 provides a detailed study of the French Economy under the title: *The French Economy: Basic Problems of Occupational Structure and Regional Balance*.

Demographic Yearbook—Annuaire Démographique, 1954. 1954. pp. 729.

The sixth issue of the demographic yearbook published by the Statistical Office of the United Nations. It includes statistical tables on *Population, Births, Reproduction Rates, Stillbirths, Deaths, Marriages, Divorces, Life Tables*, and *International Population Movements*. The Yearbook also includes a 24-page *Bibliography* of recent official publications "containing census and other demographic statistics for each area of the world". This bibliography is a supplement to that which appeared in the *Demographic Yearbook 1953*.

OTHER PUBLICATIONS

Distribution of Non-Farm Incomes in Canada by Size. Ottawa. Dominion Bureau of Statistics, Research and Development Division. 1954. Reference Paper No. 52. pp. 40.

This reference paper presents estimates of the distribution of family and individual incomes in Canada in 1951. The main sections of the paper analyze *Family Incomes*; *Sources of Family Incomes*; *Incomes by Regions*; *Incomes by Age and Sex of Head of Family*; and *Income by Size of Family*. The author also discusses the *Statistical Problems of Estimation* and *Problems of Analysis*.

The paper is supplemented by *Notes and Definitions*, *Tables on Family Incomes and Individual Incomes*, an *Appendix on Sources and Methods* and another on *1948 Non-Farm Incomes*.

Feed Grain Sources in Ontario. Patterson, H. L. and D. W. Hart. Farm Economics Branch, Ontario Department of Agriculture. Toronto, Ontario. Dept. of Agriculture. January 1954. pp. 32 & Tables.

The purpose of this study was "to trace the disposition of western feed grains in the Province of Ontario and to account for the consumption pattern as far as possible".

Part I of the report deals with: *Quantities Imported*; *Time of Entry*; *Point of Entry*; *Subsidy Program for Ontario*; *Consumption Pattern Related to Geographical Location*; and *Consumption Pattern Related to Poultry and Hogs*. Part II provides a *Discussion and Analysis of Report on Dispositions and Movements of Local Feed Grain in Southern Ontario in 1953*.

Land Requirements for the Production of Human Food. Wyllie, James. Dept. of Agricultural Economics, University of London, Wye College, Near Ashford, Kent, England. June 1954. p. 38.

This report provides information on the land acreage needed in the United Kingdom to support one human being. The author studies calorie production and requirements, the calorie value of crops and livestock products, the sources of calorie output and other data relating to the production of food for human consumption.

Farm Title Transfer Survey, 1900-1950. Noble, Henry R. Farm Economics Branch, Ontario Department of Agriculture. March 1955, pp. 31.

This report presents the results of a study conducted for the purpose of indicating "the processes by which Ontario mixed livestock farm operators acquire the right to operate these farms and to find out who farms". The analysis itself is based on records concerning 2,385 farm operators and 800 farms.

The report is divided into three main parts: *Farm Tenure*, *Farm Family*, and *Farm Mortgages*. A series of pictures and attractively-designed charts help the reader grasp the significance of the material studied.

Green Peas for Processing, Production Costs. Nelson, J. B. Farm Economics Branch, Ontario Department of Agriculture. Toronto, 1954. pp. 42.

A study of the cost of producing green peas for processing, in Ontario. The main objective of the study was to secure data on: physical inputs; the distribution of the main cost items; the actual cost of production; net returns; and, the effects of variations in production methods on yields and returns.

The three main parts of the report deal with: *Average Pea Production Costs*; *Economic Factors Affecting Success*; and *Physical Factors Affecting Success*.

Economic Activity Analysis. Edited by Oskar Morgenstern. New York, John Wiley & Sons, Inc., and London, Chapman & Hall, Ltd. 1954. pp. xviii + 554.

In *Economic Activity Analysis* Oskar Morgenstern assembles a series of studies made by the Economics Research Project of Princeton University on *The Mathematical Structure of American Type Economies*. He divides his book into three main parts. Part I deals with the *Economic Properties of the Input-Output System* and includes studies of *Models of General Economic Equilibrium*; *the Input-Output System—Its Nature and Use*; *Aggregation in the Input-Output Model*; and *The Treatment of Foreign and Domestic Trade Transportation Charges in the Leontief Input-Output Table*. Part II discusses the *Mathematical Properties of Linear Economic Systems* with studies of *Inequalities for Minkowski-Leontief Matrices*; *Some Mathematical Concepts for Linear Economic Models*; *Properties of Leontief-Type Input-Output Matrices*; *Characteristic Roots of Input-Output Matrices*; *"Continuous" Programming*; *Matrices and Trees*; and *An Economic Application of "Matrices and Trees"*. Part III is concerned with *Meta-Economics* and includes a paper on *The Laws of Return, A Study in Meta-Economics* and another on *Experiment and Large Scale Computation in Economics*.

This book is a worthwhile contribution to research in economic activity analysis. In the Preface the editor expresses his belief and hope "that progress in this field may be so fast that new and better results can supersede these in a short time".

Our Expanding Economy. Blodgett, Ralph H. Rinehart & Company, Inc., New York. 1955. pp. xv + 973.

Our Expanding Economy: An Introduction is intended as a basic textbook for beginning courses in economic principles, problems, and policies.

The author reviews the problems and principles of production and economic growth, allocation and pricing processes, distribution of income and analysis of national income and related matters. He also discusses international economics, socialism, communism and the British Welfare State.

THE ECONOMIC ANNALIST

A BIMONTHLY REVIEW OF AGRICULTURAL BUSINESS

MARKETING SERVICE, ECONOMICS DIVISION

J. F. BOOTH, Chief

AUGUST 1955

Vol. XXV, No. 4

CONTENTS

	Page
The Economic Situation.....	75
Agriculture and the GATT Review of 1954-55.... <i>A. E. Richards</i>	78
Farmers' Experience in Co-operative Ownership of Farm Machinery in Nova Scotia..... <i>G. C. Retson and V. A. Heighton</i>	82
Financial Structure of Canadian Purchasing Co-operatives..... <i>H. K. Ingersoll</i>	86
Recent World Trends in Trade, Consumption and Prices of Eggs..... <i>E. Jaska</i>	90
Let There Be Bread.....	93
United Nations Publications.....	95
Other Publications.....	96

EDITORIAL COMMITTEE:

G. P. Boucher, L. E. Drayton and Frank Shefrin

Published by Authority of the Right Honourable James G. Gardiner
Minister of Agriculture

ANNUAL AND MONTHLY INDEX NUMBERS

WHOLESALE PRICES, FARM PRICES AND LIVING COST INDEXES

Year	Wholesale Prices 1935-1939=100				Farm Prices of Agricultural Products 1935-39 =100 (e)	Commodities and Services used by Farmers 1935-39=100		Consumer Price Index (1949 =100) (h)	Food Index (1949=100) (i)	Index of industrial production (1935-39 =100) (j)
	(a) General Wholesale Index	(b) Farm Products	(c) Field Products	(d) Animal Products		(f) Equipment and Materials	(g) Composite Index			
1913.....	83.4					85.4		49.2	44.4	
1914.....	85.4					90.2	85.3	49.6	46.0	
1915.....	91.8					96.9	91.6	50.3	46.8	
1916.....	109.8					101.7	100.5	54.2	51.8	
1917.....	148.9					140.7	140.5	63.7	66.9	
1918.....	166.0					164.1	160.2	72.0	76.9	
1919.....	174.7					169.1	167.9	78.8	82.2	
1920.....	203.2					190.1	186.5	90.5	94.4	
1921.....	143.4					147.4	152.5	80.9	72.5	
1922.....	126.8					124.6	134.1	74.9	61.5	
1923.....	127.7					118.3	130.6	75.2	61.9	
1924.....	129.5					122.3	131.9	74.0	60.7	
1925.....	133.8					123.2	131.8	74.6	63.4	
1926.....	130.3	144.4	158.5	130.2		119.9	130.6	75.9	66.6	
1927.....	127.3	138.6	149.4	127.8		119.9	131.2	74.6	65.3	
1928.....	125.6	136.3	134.3	138.2		118.3	129.3	75.0	65.6	
1929.....	124.6	140.8	137.2	144.4		117.6	127.9	75.8	67.1	
1930.....	112.9	119.5	105.8	133.3		105.6	117.0	75.3	65.6	
1931.....	94.0	78.9	65.0	92.7		92.2	100.9	67.9	51.4	
1932.....	86.9	65.5	60.4	70.5		89.3	93.3	61.7	42.8	
1933.....	87.4	69.3	69.3	69.2		88.8	89.8	58.8	42.3	
1934.....	93.4	83.5	80.5	86.5		96.8	95.5	59.6	46.2	
1935.....	94.4	89.2	84.4	94.1	88.0	95.6	95.4	59.9	47.2	85.6
1936.....	96.7	97.9	102.2	93.7	96.9	98.7	98.1	61.1	48.8	94.6
1937.....	107.8	117.4	128.9	106.0	119.7	108.4	105.3	63.0	51.4	108.0
1938.....	102.0	102.9	100.9	104.8	105.0	101.7	101.7	63.7	51.7	102.0
1939.....	99.2	92.6	83.7	101.5	91.8	95.7	99.3	63.2	50.2	109.7
1940.....	108.0	96.1	85.4	106.7	96.8	101.8	106.8	65.7	52.6	131.4
1941.....	116.4	106.6	88.9	124.4	110.2	107.8	116.1	69.6	57.9	164.8
1942.....	123.0	127.1	109.7	144.6	133.1	119.2	131.6	72.9	63.4	195.7
1943.....	127.9	145.4	129.0	161.8	157.8	122.4	143.4	74.2	65.2	208.5
1944.....	130.6	155.3	144.5	166.1	172.4	126.0	148.0	74.6	65.5	212.4
1945.....	132.1	166.4	162.5	170.2	185.7	125.9	152.1	75.0	66.3	187.2
1946.....	138.9	179.5	177.9	181.2	204.1	128.0	157.0	77.5	70.0	171.9
1947.....	163.3	192.2	184.1	200.2	215.8	139.5	170.4	84.8	79.5	187.8
1948.....	193.4	232.1	200.6	263.7	255.8	173.1	197.4	97.0	97.5	196.3
1949.....	198.3	228.7	191.9	265.4	255.4	180.3	204.1	100.0	100.0	199.6
1950.....	211.2	236.7	191.9	281.4	260.8	189.9	210.4	102.9	102.6	211.5
1951.....	240.2	268.6	200.4	336.9	296.8	206.0	230.0	113.7	117.0	226.5
1952.....	226.0	250.2	223.0	277.5	274.4	215.8	243.1	116.5	116.8	232.9
1953.....	220.7	221.6	179.4	263.8	249.5	207.4	239.8	115.5	112.6	248.4
1954.....	217.0	210.4	164.6	256.2	232.0	203.3	235.9	116.2	112.2	
1954										
Feb.....	219.1	214.0	163.3	264.7	238.6			115.7	111.7	239.4
Mar.....	218.7	211.9	161.7	262.0	237.6			115.5	110.7	236.8
Apr.....	218.0	210.7	161.0	260.4	238.4	204.1	238.0	115.6	110.4	242.4
May.....	217.9	214.8	161.6	268.0	240.4			115.5	110.2	245.6
June.....	217.6	214.8	162.3	267.3	234.9			116.1	112.0	252.5
July.....	217.4	219.6	177.0	262.1	234.5			116.2	112.1	238.5
August.....	215.8	208.4	168.7	248.2	231.2	201.9	238.7	117.0	114.4	246.7
Sept.....	215.3	204.6	163.8	245.5	227.5			116.8	113.8	253.7
Oct.....	214.3	201.7	162.9	240.5	220.0			116.8	113.8	256.0
Nov.....	214.9	204.2	165.2	243.1	219.3			116.8	113.4	254.4
Dec.....	215.4	205.3	164.6	245.9	219.7			116.6	112.6	240.6
1955										
Jan.....	215.7	207.0	165.6	248.4	220.9	205.8	231.8	116.4	112.1	238.1
Feb.....	217.4	206.7	167.6	245.8	222.3			116.3	111.5	247.9
Mar.....	217.4	203.7	166.1	241.3	221.6			116.0	110.7	251.5
Apr.....	218.5	212.7	186.8	238.7	228.8	204.7	240.3	116.1	111.0	253.4
May.....	217.8	213.3	183.2	243.4	229.5			116.4	112.3	236.8
June.....	218.7	212.2	174.3	250.0				115.9	111.0	

(a) Canada. Dominion Bureau of Statistics, Labour and Prices Division. *Prices and Price Indexes*. Ottawa, Monthly.

(b) Ibid. (a). Wholesale prices of products of Canadian farms.

(c) Ibid. (a). Wholesale prices of grains, hay, tobacco and potatoes.

(d) Ibid. (a). Wholesale prices of animals and animal products.

(e) Canada. D.B.S., Agriculture Division. *Index Numbers of Farm Prices of Agricultural Products*. Ottawa, Monthly.

(f) Canada. Dominion Bureau of Statistics, Labour and Prices Division. *Price Index Numbers of Commodities and Services Used by Farmers*. Ottawa, Jan., Apr. and Aug. Includes prices of commodities in 8 groups including farm implements, building materials, gasoline, oil and greases, feed, fertilizer, binder twine, seed and hardware.

(g) Ibid. (f). Includes the 8 commodities indicated above plus tax rates, interest rates and farm wage rates.

(h) & (i) Canada. Dominion Bureau of Statistics, Labour and Prices Division. *Prices and Price Indexes*. Ottawa, Monthly.

(j) Canada. Dominion Bureau of Statistics. *Canadian Statistical Review*. Ottawa, Monthly.

THE ECONOMIC SITUATION

Royal Commission on Canada's Economic Prospects.—On June 17 the Prime Minister announced, in the House of Commons, the appointment of a royal commission on Canada's economic prospects to inquire into and report upon the long-term prospects of the Canadian economy, that is to say, upon the probable economic development of Canada and the problems to which such development appears likely to give rise, and without limiting the generality of the foregoing, to study and report upon

- (a) developments in the supply of raw materials and energy sources;
- (b) the growth to be expected in the population of Canada and the changes in its distribution;
- (c) prospects for growth and change in domestic and external markets for Canadian production;
- (d) trends in productivity and standards of living; and
- (e) prospective requirements for industrial and social capital.

Gross National Product.—Canada's gross national product continued its advance during the first quarter of 1955. The value of the total output of goods and services, seasonally adjusted at annual rates, amounted to \$25 billion, an increase of three per cent over the fourth quarter of 1954 and four per cent over the average of \$24 billion for the year 1954 as a whole.

The increase in gross national product, excluding accrued net income of farm operators, amounted to about \$400 million. Allowance made for seasonal factors, about one-half of the production gain occurred in manufacturing, the major increases being in transportation equipment, iron and steel products, and wood products. In the non-durable manufacturing sector of the economy major gains were recorded in foods and beverages and in rubber products. Mining and forestry output and production in the service industries also continued to expand.

The expansion of business activity was accompanied by a build-up of business inventories and a sharp rise in merchandise exports; other major components of demand were relatively stable. About half of the inventory build-up (seasonally adjusted) appears to have been in the automobiles component; the production of automobiles was a major factor in

the uprising in manufacturing activity. The gains in merchandise exports were generally widespread and affected most of the major categories in the export group, especially the agricultural products, the iron and its products, and the non-ferrous metals and chemicals categories.

Domestic Exports.—The total value of domestic exports in May amounted to \$367 million, an increase of 3.5 per cent from the \$354.7 million recorded for May 1954. Average prices were about 1.0 per cent higher and volume 2.4 per cent larger. The gain in domestic exports was lower in May than in the previous four months; the cumulative total for the first five months of the year increased by 10.4 per cent from \$1,498 million in 1954 to \$1,654 million in 1955.

Domestic exports to the United Kingdom rose from \$58.3 million in May 1954 to \$66.6 million in May this year, and the cumulative total for the January-May period from \$232 million in 1954 to \$319.8 million in 1955. Main increases in May were in agricultural and vegetable products, non-metallic minerals, chemicals and iron products, and in the first five months of the year domestic exports of the wood and paper and non-ferrous metals were also higher. Shipments to other Commonwealth countries increased slightly from \$19.6 million in May 1954 to \$21 million in May this year, and from \$76 million in January-May 1954 to \$93.5 million in the corresponding period of 1955.

Shipments to the United States increased from \$208.8 million in May last year to \$217.5 million in May this year, and those for the first five months of the year from \$912.1 million in 1954 to \$974.6 million this year. In both periods exports were higher for wood and paper, non-ferrous metals, non-metallic mineral and chemical products, and in May this year there was an increase in exports of iron and steel products. These gains were partly offset by continued lower shipments of agricultural and vegetable products and animals and animal products.

The value of exports to Latin America dropped from \$19.3 million in May 1954 to \$14.2 million in May 1955, mainly as a result of a further sharp drop in the value of shipments to Brazil; exports during the January-May period declined

from \$77.6 million last year to \$64.6 million this year. Sales to Argentina, Columbia and Mexico continued to rise.

Exports to European countries rose from \$31.6 million in May 1954 to \$34 million in May 1955 and from \$111.8 million in the first five months of 1954 to \$133.2 million in the corresponding period this year. In May, gains were recorded in exports to Belgium and Luxembourg, France, Ireland and the Netherlands, and in the January-May period gains were registered for exports to Germany. Exports to all other countries declined from \$15.7 million in May 1954 to \$12.6 million in May 1955, and from \$83.7 million during the first five months of 1954 to \$62.1 million in the corresponding period of 1955.

Industrial Production.—Preliminary figures indicate that Canada's composite index of industrial production for April stood at 258.4 compared with 242.4 for April 1954. The manufacturing component rose from 253.5 in April 1954 to 267.4 in April 1955 and the mineral output component from 182.9 to 203.9. The index of non-durable manufactures advanced from 218.9 to 231.1 and the index of durable manufactures from 307.6 to 324.3.

Construction Industry.—According to estimates made by the Dominion Bureau of Statistics, Canada's construction industry is expected to exceed the \$5 billion level for the first time in 1955. These estimates are based on January intentions and place the total value of construction in 1955 at \$5,059 million, about \$369 million or eight per cent over the total value in 1954. The physical volume of construction is expected to increase by the same percentage, over the volume in 1954. Almost all the increase in value and volume is expected to be in new construction. The value of new construction is estimated at \$4,063 million compared with \$3,696 million in 1954.

Industrial Employment.—The advance index of industrial employment (1949=100) continued to advance in May, rising from 105.7 at April 1 to 107.3 at the beginning of May and 106.2 at May 1st, 1954.

Weekly payrolls disbursed by the larger industrial establishments rose by 2.1 per cent from April to May and 4.3 per cent from May 1, 1954 to the beginning of May 1955. The composite index of payrolls stood at 153.1 compared to 150.0 at April 1 and 146.8 at May 1, 1954. Average weekly wages and salaries

advanced to a new all-time high at \$61.00 compared to \$60.68 a month earlier and \$59.15 a year earlier. There were considerable gains in construction, transportation, storage and communication, manufacturing, and trade, and smaller additions to the working forces in public utilities and the service industries. Employment in logging and mining declined but on a smaller scale than a year previously.

Prices.—The composite index of prices of commodities and services used by farmers, including farm living costs, stood at 225.7 in April (1935-39=100), compared to 220.6 in January and 225.3 in April 1954. Exclusive of the farm family living component the index registered 240.3. The January-April increases mainly reflected seasonal changes in farm wage rates.

Farm prices of farm operating equipment and materials declined by 0.5 per cent between January and April, reflecting decreases of 9.5 per cent for binder twine, 2.7 per cent for seed, and minor decreases for machinery, building materials and hardware. Feed prices increased 0.9 per cent but gasoline, oil and grease, and compound fertilizer prices remained stable.

The index of farm prices of agricultural products reached 229.5 in May, a slight increase from the revised April index of 228.8. Advances in the prices of livestock and some grains more than offset reductions in the prices of dairy products and potatoes.

Wheat.—Visible supplies of Canadian wheat in store or in transit in North America totaled 349 million bushels on June 29, compared to 341 million a week earlier and 349.5 million a year previously. Overseas exports of wheat during the week ended June 29 totaled 3,594,000 bushels compared with 2,747,000 in the corresponding week of 1954; cumulative exports in the current crop year had reached the 188 million bushel mark compared with 182.7 million for the corresponding period of 1954.

Supplies of wheat remaining on or about June 1, 1955 in the four major exporting countries for export and for carry-over at the end of their respective crop years amounted to 1,785.3 million bushels, compared to 1,849.6 million bushels at May 1 and 1,802.7 million bushels a year earlier.

June 1 supplies—in million bushels, and figures for June 1954 in brackets—were held as follows: United States,

1,001.8 (921.3); Canada, 513 (628.2); Argentina, 137.6 (121.6); and Australia, 132.9 (131.6).

Total exports of wheat and flour in terms of wheat from these four countries in the first ten months (August-May) of the current Canadian crop year totaled 629.6 million bushels, compared with 526.1 million bushels during the corresponding period of the 1953-54 crop year. Shipments from the United States increased to 227.2 million bushels from 170.7 million bushels; from Argentina, to 112 million from 94.1 million; and from Australia to 81.7 million from 52.2 million bushels. Shipments from Canada declined slightly to 208.7 million bushels from 209.1 million bushels.

Dairy Products.—Production of creamery butter increased from 46.5 million pounds in June 1954 to 47.7 million pounds in June this year and from 139.7 million pounds in the January-June period of last year to 140.4 million pounds in the corresponding period this year. Domestic disappearance in June was estimated at 25.7 million pounds compared with 23.8 million pounds in June 1954. There were 90 million pounds of creamery butter in store in Canada at the beginning of July, 15.1 million pounds more than on the same date last year.

The output of process cheese increased from 3.0 million pounds in June 1954 to 3.8 million pounds in June 1955 and from 22.0 million pounds in the first half of 1954 to 22.5 million pounds in the first half of 1955. Production of cheddar cheese declined from 13.7 million pounds in June last year to 13.0 million pounds in June this year and from 35.0 million pounds in the January-June period of 1954 to 32.9 million pounds in the corresponding period of 1955.

Margarine.—The production of margarine declined from 9.5 million pounds in June 1954 to 8.7 million pounds in June 1955 but rose from 56.5 million pounds in the January-June period of 1954 to 64.4 million pounds in the January-June period of 1955.

Farm Income.—Cash income received by Canadian farmers from the sale of farm products in the first quarter of 1955 was estimated at \$472 million, compared to \$506.2 million in the corresponding period of 1954 and the all-time high first quarter estimate of \$555.7 million in 1952. The decline in cash income is attributable mainly to much smaller

wheat participation payments and substantially lower returns from the sale of oats and hogs.

Declines in farm cash income in Quebec, Manitoba, Saskatchewan, Alberta and British Columbia more than offset the gains in other provinces. The declines ranged from less than one per cent in British Columbia to almost 33 per cent in Saskatchewan and the gains from about 1.5 per cent in Nova Scotia to about 30 per cent in Prince Edward Island.

Farm cash income from wheat amounted to \$50 million compared with \$49.5 million in the first quarter of 1954; deliveries were slightly larger but they were offset by lower average prices. Wheat participation payments amounted to only \$195 thousand compared with \$27.7 million in the first quarter of last year. The 1954 first-quarter payments represent part of the final payment on the 1952 wheat crop. Final payments on the 1953 wheat crop were not announced until mid-May this year.

Income from marketings of oats is estimated at \$3.5 million, considerably below the \$13 million realized in the first quarter of 1954. Average prices were a little higher than last year but marketings equalled only about one-quarter of those in the first three months of 1954. Income from the sale of barley rose to \$12.2 million from the sale of \$11.6 million in the first quarter of last year.

Income from the sale of potatoes is estimated at \$9.2 million compared with \$5.9 million in the first quarter of 1954. Returns from the sale of tobacco rose to \$61.8 million from \$47.5 million.

Cash income from the sale of livestock declined to \$167.5 million from \$181.2 million in the first three months of last year. A marked drop in returns from the sale of hogs, from \$89.8 million to \$73.8 million, more than offset the increased income from marketings of other livestock. Income from cattle and calves rose to \$92.2 million from \$89.9 million and income from sheep and lambs to \$1.6 million from \$1.5 million. Hog prices well below the 1954 level more than counterbalanced the increases in marketings but slightly reduced cattle marketings were more than offset by higher prices.

Income from dairy products amounted to \$79.7 million, about the same as in the first quarter of 1954. Lower prices for eggs more than offset higher marketings and resulted in a slightly lower income.

AGRICULTURE AND THE GATT REVIEW OF 1954-55

A. E. RICHARDS¹

Many of the most difficult problems which were considered in the Review Session of the Contracting Parties to the General Agreement on Tariffs and Trade were in the field of agriculture and of direct concern to Canadian farmers.

The Review of the Agreement was additional to the regular work of the Ninth Session of the members of GATT, who held their First Session at Havana in 1948. Thirty-four countries participated in the Ninth Session which opened in Geneva on October 28, 1954 and ended on March 8, 1955. About four weeks were devoted to regular sessional work, a large part of which consisted of the hearing and settlement of disputes. The Review occupied the remaining weeks of the Session.

The General Agreement was drawn up in the immediate postwar atmosphere. Its framers provided for a transitional period of three or four years by which time it was hoped that trade would flow freely in economic channels and that balance of payment difficulties would largely have disappeared. These hopes were not fully realized.

In 1954, after seven years' experience of trading under GATT, member countries decided that they should face the realities of the trading world and revise the Agreement in the light of present day conditions.

During the winter of 1954-55 representatives of the 34 countries meeting at Geneva worked long and painstakingly on the task of amending or rewording sections of the complicated legal document which comprises the operating provisions of the GATT. The end purpose of this work was to draw up a revised agreement which would have a reasonable chance of being accepted by the parliaments of each of the member countries.

The GATT meeting was unlike many other international conferences which make recommendations to governments. The Review Session was writing commitments in a legal document which governments must accept or withdraw from the Agreement.

It is a tribute to the strength and permanence of the GATT that it survived without any important changes in its basic trade rules. There was, from the Canadian viewpoint, a weakening in certain sections, but other parts of the Agreement were strengthened. Perhaps the result was best summed up by the Canadian Minister of Trade and Commerce when he remarked, "the Agreement was not all we hoped for but better than we expected".

The great binding force and strength of the Agreement of course lies in the schedules of tariff concessions appended to the code of trading rules and commercial provisions. All countries recognize the trading value of the concessions negotiated from 1948-1951 at Geneva, Annecy and Torquay on 58,000 items. At Geneva in 1955 countries agreed that they wanted the validity of the concessions to continue for an indefinite period. They recognized that trading rules were necessary to stabilize and protect the concessions and for that reason, perhaps more than for any other, persevered in the task of producing the revised version of the GATT.

In certain cases where the trading practices of individual countries were in conflict with the GATT code of conduct a waiver to obligations was granted. A waiver is intended for dealing with a temporary situation. It is a device deemed preferable by the contracting parties to new permanent escape clauses in the Agreement. All waivers are subject to reporting and annual review in the forum of the Contracting Parties. These and other important provisions of the new GATT are discussed in the following sections.

¹ Member of Canadian Delegation to the Review Session of the General Agreement on Tariffs and Trade, held October, 1954 to March, 1955 at Geneva, Switzerland.

The United States Waiver.—Relatively high price supports for agricultural products in the United States tend to attract abnormally large quantities of imports. Section 22 of the Agricultural Adjustment Act of 1933, as amended, protects price support or production programs either by fees on imports or by import quotas. It is mandatory legislation which provides that when an investigation shows that imports are rendering ineffective any program or operation undertaken by the United States Department of Agriculture restrictions in the form of fees or quotas must be imposed on imports. The United States was using this authority to apply quotas on imports of products receiving price support benefits. This action was in conflict with GATT which prohibits the use of import restrictions except in special circumstances. Price support alone does not qualify as a special circumstance under GATT.

The Contracting Parties accepted the fact that the United States could not be expected to support farm prices around the world. They took note of the efforts being made by the United States' government to lower price support levels. Having received an assurance from the United States' government that it would discuss proposals under Section 22 with interested countries before taking any action, the Contracting Parties agreed to the waiver, which provided that United States' obligations under GATT would be set aside to the extent necessary to prevent a conflict with the provisions of Articles II and XI of the General Agreement. Article II states that tariff concessions negotiated under GATT must not be impaired and Article XI deals with the general prohibition of restrictions on imports.

Canada voted against the waiver because of its "blanket" nature. It covers any agricultural product and gives protection by means of import restrictions to any program undertaken by the United States Department of Agriculture. It contains no terminal date and no commitment to permit the entry of normal imports on a "fair shares" basis. The Canadian delegation, however, indicated that they expected the United States to abide by the principle of fair shares and by other GATT principles.

Perhaps the most important condition pertaining to the waiver is the annual review made by the Contracting Parties. For each such review the United States is required to furnish a full report giving the reasons why restrictions continue to be applied and any steps taken towards a solution of the problem of surpluses of agricultural products.

The Hard-Core Waiver.—A number of European countries use import restrictions in addition to the tariff to protect their agricultural producers. Some of the import controls are of long standing, dating from the early thirties, long before GATT came into existence. GATT in 1947 outlawed import controls, except under special circumstances, because they are considered the most damaging form of restraint on trade.

The most important exception to this general rule is that for balance of payments reasons. Members are permitted to use quantitative import restrictions or exchange controls to protect their foreign exchange reserves from serious depletion. Under the rules of GATT, as soon as import restrictions can no longer be justified for balance of payments reasons, they are to be eliminated.

In a number of European countries balance of payments difficulties are disappearing. The governments of these countries contend, however, that their farmers cannot face the sudden competition of unrestricted imports on many agricultural products. This is the "hard-core" problem for which a waiver to the GATT obligation of "no import quotas" was sought.

On March 5 the Contracting Parties voted in favor of permitting import restrictions to be maintained for a transitional period on "hard-core" commodities, under strict conditions and procedures. The conditions under which a

"temporary" waiver was granted include prior approval by the Contracting Parties for each case, a time limit not exceeding five years on the use of import quotas and the granting of a fair share of the market to traditional suppliers. Reporting and review procedures on an annual basis are set out in detail in the waiver.

Export Subsidies.—The rules governing the use of export subsidies have been strengthened in the revised Agreement. Under the 1947 Agreement member countries were obliged to notify the Contracting Parties of any subsidy which operated to increase exports or decrease imports. There was no ban on the use of export subsidies but a country granting a subsidy could be required, on request, to consult with other contracting parties about the possibility of limiting the subsidy.

Four additional provisions dealing with export subsidies have been added in the revised GATT to the subsidy Article. First, the harmful effects of export subsidies, which may cause undue disturbance to the normal commercial interests of other members, are recognized. Secondly, the contracting parties agree that the use of subsidies on the export of primary products should be avoided. If they are used, they must not enable the country employing them to acquire more than a fair share of world export trade in the product. The "fair share" is to be based on trade in the product in a previous representative period and on other special factors such as trends of trade in recent years. A "primary product" is defined as any product of farm, forest or fishery or any material in its natural form or which has undergone such processing as is customarily required to prepare it for marketing in substantial volume in international trade.

Thirdly, agreement was reached that from January 1, 1958 or the earliest practicable date thereafter no export subsidies would be paid on non-primary products. Before that date no contracting party is to extend the scope of such subsidization beyond that existing on January 1, 1955.

Fourthly, the operating results of subsidy payments by members are to be reviewed by the Contracting Parties from time to time with a view to avoiding subsidization seriously prejudicial to the trade or interests of contracting parties.

State Trading.—The contracting parties recognized that government monopolies might be operated so as to create serious obstacles to trade. The amended Agreement requires that all GATT members shall notify the Contracting Parties of all products imported or exported under government monopoly control. On request an import monopoly is required to report to the Contracting Parties the import mark-up on a product during a recent representative period. If a member of GATT believes that its interests are being affected adversely by a state trading enterprise that member can through the Contracting Parties require the government controlling the enterprise to report fully on its monopoly operations. Marketing boards, if engaged in buying or selling, are subject to the rules governing state trading enterprises.

Anti-Subsidy Duties.—Action is being taken at the present session of Parliament to amend the Customs Tariff to provide for the application of a special additional duty on imports of goods which have been state subsidized. The amount of the duty which may be levied on goods of a class or kind produced in Canada will be equal to the amount of the subsidy. This type of duty is known in GATT language as a countervailing duty, and may be applied under Article VI of the Agreement. The provisions in this article, as they relate to anti-dumping duties, were unchanged. These duties, which Canada can apply under the Customs Tariff and the Customs Act, provide protection against the dumping of goods in another country at less than the normal value of the products.

The General Agreement condemns dumping if it threatens or causes material injury to an established industry or retards the establishment of an industry. The Agreement also permits anti-dumping or countervailing duties which will enable a country to obtain protection against injury to domestic industry from dumping or subsidization. The duty is to be not greater than the margin of dumping or the amount of the government subsidy. There is also provision for the levying of duties to protect the industry of a third country exporting the product to the market in which the dumping or subsidization is occurring. It is this section which is strengthened in the revised GATT. It will be mandatory for the Contracting Parties to grant an importing country permission to levy countervailing duties when it finds that serious injury to the third country exists and such duties may be levied without prior approval of the Contracting Parties when delay would cause serious damage. Such action must, however, be reported promptly. In no case can an importing country be required to take action on behalf of an injured country.

Disposal of Agricultural Surpluses.—Consideration was given to writing a new article into the revised GATT which would deal with the important problem of the disposal of agricultural surpluses. The main concern was associated with the agricultural surplus in one country, the United States, and it was hoped that the difficulties there were not of a permanent nature. Accordingly the Contracting Parties decided that the problem would be most appropriately dealt with by a resolution which was passed unanimously on March 4, 1955. The Contracting Parties recognized that the unrestricted sale of surplus farm products on world markets would seriously disrupt regular competitive exports and market prices. They recognized also that the disturbing effects of such disposals could be substantially diminished through consultation. In the resolution the Contracting Parties expressed their intention to liquidate agricultural surpluses in such a way as to avoid undue disturbance of world markets. When arranging the disposal of surplus agricultural products a procedure of consultation is to be followed which is expected to contribute to their orderly liquidation.

International Commodity Agreements.—During the course of the Review the Contracting Parties established a working party to consider a special agreement providing general rules under which particular commodity agreements could be drawn up and applied, and also to consider the relationship between a commodity agreement and the General Agreement. The working party acted in the capacity of an expert group which meant that the interim report and draft agreement which it produced did not necessarily represent the views of governments. The Contracting Parties decided that the draft agreement should be sent to all interested governments for study and comment. After receiving the views of governments the working party will meet again to work out a new draft agreement for re-submission to governments.

Organization for Trade Co-operation.—The 1947 GATT was written as a temporary measure, to fill the period until the International Trade Organization was ratified by governments. The ITO was never set up but GATT provisions were extended to give continuing effect to the rules of trade so established. These rules were, however, only as good as their enforcement. For this reason it has appeared to the contracting parties desirable to strengthen the formal organization of the Agreement. At the Review Session an agreement was reached on the formation of an Organization for Trade Co-operation to administer the General Agreement. All contracting parties are eligible to become members of the Organization, which is to enter into force 30 days after the acceptance of the agreement by governments of territories whose external trade accounted for 85 per cent of the total external trade of GATT

members in the years 1949-53. If not established formally by November 15, 1955, the agreement may be applied provisionally by those governments prepared to do so if their territories account for 85 per cent of trade as above.

The functions of the Organization are:

- (i) to facilitate intergovernmental consultation on questions relating to international trade;
- (ii) to sponsor international trade negotiations;
- (iii) to study questions of international trade and commercial policy and where appropriate make recommendations;
- (iv) to collect, analyse and publish information and statistical data on international trade and commercial policy.

The Organization is to have no authority to amend provisions of the General Agreement and no decision or other action of any body set up under the Organization may have the effect of imposing any new obligation which a member has not specifically agreed to undertake.

There is provision for the establishment of an Assembly, an Executive Committee and a Secretariat. The Assembly, comprised of all member countries, each with one vote, is to meet in annual session, with special sessions as required. The Executive Committee is to consist of 17 members each elected for a single term, including the five members of chief economic importance on a trade basis. It is to be representative of broad geographical areas and different degrees of economic development. A Director-General would be appointed as the chief administrative officer of the Secretariat.

The Organization may, by approval of the Assembly, become one of the specialized agencies of the United Nations.

A protocol of organizational amendments to the General Agreement on Tariffs and Trade, to be signed by November 15, 1955 or such later date as GATT members may decide, provides that the term Organization for Trade Co-operation in the GATT shall, where appropriate, be substituted for the term CONTRACTING PARTIES and that the title Director-General of the Organization be inserted in place of the titles Executive Secretary to the CONTRACTING PARTIES and Secretary-General of the United Nations.

On the establishment of the Organization, therefore, references in this article to the CONTRACTING PARTIES should be amended so that these words are replaced by the words Organization for Trade Co-operation.

FARMERS' EXPERIENCE IN CO-OPERATIVE OWNERSHIP OF FARM MACHINERY IN NOVA SCOTIA

G. C. RETSON and V. A. HEIGHTON

In recent years there has been a sharp increase in investment in machinery and equipment on Canadian farms. In 1951 the value of that type of investment averaged about \$3,000 per farm, over three times its value in 1941. The same trend was evident in Nova Scotia, and in the three Maritime Provinces as a group. The average per farm was \$1,072 for Nova Scotia and \$1,139 for the entire Maritime group, or over three times the value in 1941.

The proportion which machinery and equipment represent of total farm investment also increased markedly during the same period. From ten per cent in 1921, for all Canadian farms, it rose to 14 per cent in 1941 and a little over 20 per cent in 1951. In Nova Scotia it rose from slightly over seven per cent to 12 per cent in 1941 and 17 per cent in 1951; for the Maritimes group as a whole it increased from a little over nine per cent in 1921 to 13 in 1941 and 17 per cent in 1951.¹

¹ Census of Canada Vol. VI, Part 1, 1951.

Statistics disclose the relative importance of machinery and equipment in the farm investment picture. Experience and observation also indicate that the purchase of the machinery and equipment now required to operate a commercial farm is a serious handicap to the young prospective farmers and others wishing to get started in farming. Also adversely affected are the small farms on which not enough work is done to justify the cost of purchase of certain of the more expensive items of equipment.

The use of this equipment may be secured on a custom basis, but the charges may sometimes be excessive and the service unsatisfactory. So, it is frequently suggested that greater use be made of joint and co-operative ownership as a means of reducing machinery costs and providing small farms with labor-saving equipment at a price which they can afford to pay.

A considerable amount of farm equipment is owned and operated on a joint or co-operative basis. Threshing and silo-filling equipment are probably the two types of equipment most commonly owned or operated on that basis in Eastern Canada. However, the amount of machinery operated co-operatively, probably represents only a small proportion of all power equipment.

The lack of development in joint or co-operative use of farm machinery has been attributed to many factors. Probably the most important of these is the problem of timeliness in farming operations. Inability to secure the necessary equipment at the right time may result in serious loss as well as frustration. On adjoining farms operations usually follow a similar pattern, which is certain to result in conflicting needs for co-operatively owned equipment. The importance of timeliness varies considerably. Highly specialized farms producing perishable crops are greatly affected by weather conditions, especially at seeding and harvesting time, and can usually make very little use of jointly owned equipment. Arrangements for the joint use of farm machinery are better adapted to smaller mixed farms producing commodities less dependent on weather conditions.

Another factor sometimes associated with the limited development of co-operative use of equipment is the individualistic attitude of the farmer and his desire to operate his own equipment. Less often noted and probably of much greater importance is the lack of research and extension work on this aspect of farm management; as a result, local efforts must proceed largely on a trial and error basis.

Data on various phases of co-operative use of farm equipment are available from a study of the operations of tractor clubs in Nova Scotia. These clubs, organized under a co-operative tractor policy instituted by the Nova Scotia Department of Agriculture in 1944, own and operate tractors and tractor equipment. Their experience, although limited mainly to small farms, stresses some of the problems relating to the co-operative use of equipment, and to the factors influencing its success or failure. A review of this experience may be of value not only to the members of the tractor clubs but also to other groups of farmers, in other provinces as well as in Nova Scotia, who may be considering the use and ownership of machinery on a co-operative basis.

The Nova Scotia tractor policy was designed to assist community organizations in the purchase of tractors and tractor equipment. Many of the clubs were run by the sponsoring agency and had the advantage of the experience and facilities provided by the parent organization. Officials such as the managers of co-operative stores often acted as club secretaries and provided substantial assistance in the keeping of records, collection and payment of accounts, and in other ways. A weakness of these clubs was that they sometimes tended to lean too heavily on the parent organization. They were also subject to the problems inherent in a large and scattered membership.

Some clubs were set up as independent organizations and their sole purpose was the co-operative ownership and operation of farm equipment. These clubs were usually established through the initiative of a few individuals and had greater freedom in the selection of their members.

Membership.—One of the first problems in setting up a farm machinery co-operative is that of membership. From the standpoint of success it would appear that at least four major questions are involved:

- (1) Who shall join?
- (2) How many members?
- (3) Location of members.
- (4) Variation in size and type of farm.

Who shall join?—The first and basic requirement in the organization of a machinery co-operative is the selection of a group of members who work well together. The question of who shall join is largely one of personalities. Members of successful clubs usually had a common background of co-operative activity in school, church or some other type of community or farmers' organization. In many cases they had previously exchanged labor and machinery or had jointly owned some items of equipment. A point frequently noted was that one unco-operative member could cause a great deal of difficulty, or even break up the club. As a safeguard it was suggested that no member should be permitted to sell his share without the consent of the other members.

How many members?—Size of membership is related to many factors including size of farm, amount and type of equipment to be operated and funds available for the purchase of that equipment. A large membership reduces the amount of the share which each member must contribute for the purchase of machinery but it also means increased conflict over the use of equipment. The co-operative use of planting, spraying, or haying equipment presents many difficulties and is usually limited to small groups with a fairly small acreage in crops. For operations such as ploughing, threshing, silo-filling, wood cutting and seed cleaning, where timeliness is usually less important, a much larger group of farmers can use the same equipment without serious conflict.

Membership in the tractor clubs studied ranged from four to 34 members. As club size increased farms became more scattered and service was often affected by communication difficulties. Conflict over equipment increased and operations usually had to be limited to those in which timeliness was of minor importance. More complex organizational problems and additional work in bookkeeping and collection and payment of accounts placed a heavy burden on officials in the larger clubs. In small machinery groups each member had a substantial investment in the equipment and tended to take a greater personal interest in its operation and maintenance. Small tractor clubs were usually able to reduce administrative work by placing more responsibility on members in financing operations and operating equipment.

Optimum membership for a farm machinery co-operative will, of course, vary with the amount of work to be done. As a general rule there appears to be a definite advantage in keeping membership at a level no higher than that required for a reasonable degree of efficiency in the use of equipment. For full time farming operations the more successful tractor clubs suggested a membership of not more than four to seven farms. In the case of the two most successful clubs, which had been in operation for ten years, the farms averaged 125 acres in size of which 43 acres were in crops. Livestock averaged 15 cows, 11 other cattle, 225 hens, two horses, and two hogs per farm. Major receipts were from the sale of fluid milk, eggs and poultry, and vegetables and small fruit of which there was an average of two to three acres per farm. In one of these clubs two of the members operated their own tractors. When not using these tractors they made them available to other members at the regular

price. This club also hired equipment for use by the members. In the absence of such special arrangements it is possible that the membership would have been kept at less than seven, as was actually suggested by the management of the club. As a further comment on club size it should be noted that members who died or became inactive through age were seldom replaced and there was a marked tendency in most clubs to reduce the number of members.

Location.—Location is another important consideration in the selection of the members. Distance between farms gives rise to communication problems, particularly when some of the members do not have telephones. In clubs with a large scattered membership, a considerable amount of time was spent moving equipment from farm to farm and differences of opinion sometimes developed over payment for the time the equipment was in transit. Scattered membership appeared to be the cause of much of the trouble which sometimes developed. A frequent complaint in such clubs was that time was lost in attempting to locate the equipment when some member failed to return it promptly to the central storage point. With members located on adjoining farms, often within sight or sound of the equipment, this problem seldom developed. On the average, members of tractor clubs were located in an area extending about four miles. With very few exceptions members of the more successful clubs were located within an area of two miles or less. In three of the most successful clubs the greatest distance which equipment had to be moved was one and one-quarter miles. Clubs with members located on nearby or adjoining farms were able to maintain close contact with each other and could usually work out a more flexible type of program which permitted extensive use of equipment with a minimum of friction between members.

Variation in Size and Type of Farm.—Farms in successful clubs tended to be fairly uniform in size and type of farming. Variations in size sometimes gave rise to dissatisfaction on the part of owners of smaller farms who felt they were getting less for their investment than their neighbors who owned larger farms.

Summary.—Successful clubs were composed of a group of members who were able to work well together. Frequently they had a common background of community activity or had previously shared labor or equipment. Membership tended to be small, consisting of about four to seven farmers. Members were able to maintain close contact with each other. In most cases they were located on nearby or adjoining farms within a radius of about one mile. Farms were fairly uniform in size and type of farming.

General recommendations which emphasize reduction of cost through co-operative use of equipment often assume a size and type of club which involves a considerable amount of administrative work. This, combined with a lack of specific information on the subject, undoubtedly causes some farmers to hesitate to set up a club. Probably a more effective way of stimulating interest would be to emphasize the advantages of small membership and consequent simplicity in organization.

The rather small membership of the successful clubs was associated with farms of small to moderate size. Presumably, as farm size increases membership would be reduced below the general recommendation of four to seven farms per club. The most desirable arrangement might be one in which two or three farms shared in the use of equipment. From the point of view of organization this is the most simple arrangement possible and there seems to be good reason for suggesting it as an initial step in the development of joint or co-operative use of equipment.

FINANCIAL STRUCTURE OF CANADIAN PURCHASING CO-OPERATIVES

H. K. INGERSOLL

A co-operative, like any other enterprise, needs some criteria to evaluate its own financial structure. Past experience may provide these criteria. One guide may be a set of ideal ratios. A better criterion, however, is provided by a comparison of the balance sheet of a particular co-operative with the average balance sheet of a group of other co-operatives.

In a study currently under way, the balance sheets of a large number of co-operatives have been analyzed for the years 1947 to 1951 inclusive. A random sample was taken of about 20 per cent of the purchasing co-operatives which submitted reports to the Economics Division each year during this period. Newfoundland co-operatives were not included as the period covered by the study commenced before Newfoundland became a Canadian province.

This sample of purchasing co-operatives was restricted to retailing organizations with total assets under \$500,000 in 1951. More than 60 per cent of the co-operatives in the sample had total assets between \$25,000 and \$75,000. About 18 per cent had total assets under \$10,000 and another 18 per cent between \$75,000 and \$100,000. Only one co-operative had assets in excess of \$300,000 and the assets of four other co-operatives approached that figure.

Assets per Association

During the period studied most of the established purchasing co-operatives in Canada experienced a fairly rapid growth. As a result, the average assets of associations included in the sample increased each year from 1947 to 1951, from \$33,000 per association in 1947 to \$51,000 in 1951. Part of this increase in the value of co-operative assets is due to the increase in price levels which occurred during this period, but from the extent of the increase it is apparent that the greatest part of it represents natural growth.

As a result of the exclusion from the sample of purchasing co-operatives with assets of \$500,000 and over, data presented in Table 1 underestimate the average size of co-operatives in different provinces to a varying degree. However, there were very few local purchasing co-operatives with assets over \$500,000. The slowest rate of growth occurred in Alberta and the Maritime Provinces where assets increased by from 20 to 30 per cent during the five-year period. In Quebec, assets of established purchasing co-operatives more than doubled during the same period.

Table 1—Average Assets per Purchasing Co-operative Association, 1947-1951

Province	Year				
	1947	1948	1949	1950	1951
	— dollars —				
Maritime Provinces.....	21,591	24,948	26,170	26,068	27,389
Quebec.....	30,556	39,369	50,568	64,152	68,444
Ontario.....	54,726	61,188	66,690	75,520	84,794
Manitoba.....	37,422	36,900	42,649	48,380	49,516
Saskatchewan.....	29,024	32,903	36,316	42,644	48,575
Alberta.....	25,897	31,801	33,295	32,546	31,124
British Columbia.....	53,723	55,070	58,970	61,912	74,643
Canada.....	33,099	37,637	41,972	46,804	51,257

Structure of the Balance Sheet

In the average balance sheet shown as Table 2, total assets equal total liabilities to the public and members' equity. Thus 100 per cent in either part of Table 2, represents an amount equal to the total assets for the corresponding year in Table 1.

Table 2—Average Financial Structure of Canadian Purchasing Co-operatives, 1947-1951

	1947	1948	1949	1950	1951
ASSETS	%	%	%	%	%
1. Cash on hand and in bank and credit union...	7.3	6.7	8.1	7.2	7.5
2. Receivables less bad debts.....	11.2	10.2	10.5	12.5	12.8
3. Merchandise on hand.....	37.6	37.7	35.3	34.2	34.0
4. Other current assets.....	0.6	0.6	0.8	0.9	0.9
5. Total current assets	56.7	55.2	54.7	54.8	55.2
6. Plant less depreciation.....	28.2	30.2	31.9	31.6	30.2
7. Investments in wholesale or central.....	13.2	12.5	11.6	11.9	13.2
8. Other assets.....	1.9	1.8	1.8	1.7	1.4
9. Total assets	100.0	100.0	100.0	100.0	100.0
LIABILITIES TO THE PUBLIC					
10. Bank and credit union loans.....	4.3	5.0	4.3	5.2	4.6
11. Accounts payable.....	10.2	10.4	9.6	9.7	10.1
12. Accrued expenses.....	1.5	1.1	1.1	1.1	0.9
13. Other current liabilities.....	2.3	3.0	2.9	2.7	3.0
14. Total current liabilities	18.3	19.5	17.9	18.7	18.6
15. Mortgages and deferred liabilities.....	6.5	8.2	7.2	7.6	6.7
16. Total liabilities to the public	24.8	27.7	25.1	26.3	25.3
MEMBERS' EQUITY					
17. Loans from members.....	14.7	16.1	16.5	16.1	16.6
18. Surplus allocated to members.....	22.3	20.2	20.9	19.7	19.2
19. Liabilities to members'	37.0	36.3	37.4	35.8	35.8
20. Share capital and membership fees.....	15.0	16.7	19.2	19.6	19.8
21. Reserve not allocated to members.....	7.4	7.1	7.4	7.9	7.8
22. Undivided surplus.....	15.8	12.2	10.9	10.7	11.3
23. Net worth.....	38.2	36.0	37.5	37.9	38.9
24. Members' equity	75.2	72.3	74.9	73.7	74.7
52. Total liabilities and members' equity ...	100.0	100.0	100.0	100.0	100.0

Both assets and liabilities are broken up into a number of component parts in the balance sheet. For assets, the basic division is between current and fixed assets. For purposes of this study fixed assets are composed of the depreciated value of plant and equipment. The ideal ratio for current to fixed assets varies with the type of business operation carried on. In general, a high ratio of fixed assets to current assets leads to high fixed costs and difficulties in reducing costs if the volume of business declines. On the other hand, a low ratio of fixed assets to current assets in comparison with other businesses of the same type may provide an indication of inadequate facilities. Apparently, the usual situation for a purchasing co-operative is to have a little less than a third of its total capital invested in fixed assets and a little over half in current assets. Merchandise inventories are the main current asset and on the average exceed the fixed assets in value. Investments in a wholesale or central association represent 12 to 13 per cent of the assets. This pattern of assets was quite stable for purchasing co-operatives from 1947 to 1951, despite the rapid growth in volume of business during that period.

Liabilities may also be divided between current and deferred categories. Current liabilities, which include bank and credit union loans, accounts payable and accrued expenses have on the average been about half the amount of current assets.

Liabilities of co-operatives are also grouped as liabilities to the public, i.e., to non-members, and members' equity (or liabilities to members). This distinction is not always made clearly in the balance sheet of individual co-operatives where accounts payable and mortgage loans may in some instances include debts owing to members of the co-operatives. Despite this, the three-quarters of the liabilities of purchasing co-operatives throughout this period were consistently included in the members' equity. The increase in members' equity was proportionately as great as that in assets. Nevertheless, there was some change in the structure of the members' equity. There was a tendency for an increasing proportion of the liabilities of purchasing co-operatives to consist of share capital and for a decreasing proportion to be undivided surplus.

**Table 3—Average Financial Structure of Canadian Purchasing Co-operatives
by Provinces, 1947-1951.**

[illegible]

Inter-regional Comparisons: Despite the year to year consistency of the average balance sheet there was considerable variation between regions. (Table 3.) In part, this variation was a result of differences in goods handled by purchasing associations. In this regard, the contrast between the store associations and the bulk commodity associations in Saskatchewan is noteworthy. The latter require less physical plant, as they handle a limited variety of farm supplies. Purchasing co-operatives in both Saskatchewan and Manitoba had relatively large proportions of their assets invested in wholesale organizations. The ratio of current assets to depreciated value of plant in these two provinces was as high as in any other area.

Purchasing co-operatives in Quebec, Ontario and British Columbia have relatively large proportions of their assets invested in plant, i.e., land, buildings and equipment. As the co-operatives of these provinces also had relatively large total assets, the dollar value of plant for the typical co-operative was considerably higher than in other provinces.

Interprovincial differences in accounts receivable probably reflect differences in credit practices. A considerable proportion of co-operatives in some provinces grant credit quite freely. Many co-operative leaders consider this to be a departure from basic co-operative principles and a dangerous practice.

Some of the interprovincial differences on the liability side of the balance sheet may arise from variations in terminology and reporting practices. In Quebec co-operatives do not distinguish between loans from members and from non-members. Surplus allocated to members but not yet paid out sometimes is reported as accounts payable.

Other differences reflect more fundamental variations in financing practices. Co-operatives in Saskatchewan and Manitoba place greater emphasis on revolving funds as a source of capital than those in other provinces. This is indicated by the large proportion of their liabilities reported in the category "surplus allocated to members". Share capital is stressed as a means of financing purchasing co-operatives in Alberta, the Maritimes and Quebec.

Members' equity which includes net worth is probably the best indication of the extent to which a co-operative is in a position to weather losses and other adverse conditions. As members' equity exceeded 50 per cent of the assets of the purchasing co-operatives studied in all provinces and was about 90 per cent in Saskatchewan, the position in this respect appeared to be generally good.

Summary.—The five-year period 1947-1951 was one of rapid expansion for the typical purchasing co-operative in all provinces. This expansion did not lead to any marked changes in the composition of the average balance sheet. Growth in current and fixed assets, in liabilities to the public and members' equity, all paralleled each other.

Nevertheless, there are wide variations in the balance sheets for the individual co-operatives and in the provincial averages. These variations probably have important implications with respect to the financial condition and operation of the co-operatives. Such implications can be best evaluated only after careful study of the operations of the individual co-operatives. The averages presented here will give an indication of the normal financial structure of co-operatives.

RECENT WORLD TRENDS IN TRADE, CONSUMPTION AND PRICES OF EGGS

E. JASKA

The output of eggs in 1954 in a number of countries for which data are available was estimated to be about 70 per cent greater than in the prewar period.¹ The United States and Canada maintained the gains made during the war period. The most remarkable recovery occurred in Western Europe, particularly in the Netherlands, Belgium and Denmark, where war devastation, control in use of domestic grains and lack of currency to purchase feed grains hampered the expansion of the poultry industry. However, by 1949 these barriers had disappeared and with improved practices, these countries were able to expand their output of eggs rapidly. Consumption of eggs also increased but producers are now finding world markets more price competitive.

International Trade in Eggs.—International trade in eggs is relatively small compared with total production. Before World War II somewhat less than ten per cent of all eggs produced in major producing areas entered international trade but by 1954, although the volume was nearly equal to the prewar total, the proportion was lower.²

However, the pattern of trade has changed considerably. There has been a reversal in the relative importance of Germany and the United Kingdom, the two major importers. Imports of eggs into the United Kingdom have been considerably below prewar, and this decline is associated with increased home production.³ Western Germany in the postwar period, especially in more recent years, has become the largest importer of shell eggs. Italy is another country, among the West European importing countries, which has increased its imports of eggs considerably in comparison with prewar. On the other hand, Spain which in the prewar period ranked third among importing countries, has in recent years taken less than one-tenth of the prewar volume.⁴

During recent years, Mexico, Venezuela, Hong Kong and Malaya have also become significant importers.

Denmark and the Netherlands are again the largest exporters and in 1954 their joint exports accounted for an estimated 63 per cent of the total world export.⁵ Netherlands egg exports in 1954 reached a record level,⁶ exceeding the Danish total. The Eastern European countries were an important source of eggs before the war but in postwar years shipments declined to one-third of the prewar level, and only Poland continued to maintain exports. The estimated volume of exports from the mainland of China in recent years showed an increase and was about 80 per cent above the prewar level.⁷

¹ "Indicated Production of Eggs in Specified Countries, 1954." In *The Poultry and Egg Situation*. USDA. Washington. PES-173. Outlook Issue 1955. October 1954. p. 33.

² In 1954 the Netherlands exported about 170.8 million dozen, Denmark, 149.5 million dozen, the United States, 48.0 million dozen and Canada, 6.8 million dozen eggs. Western Germany imported about 210.0 million dozen and the United Kingdom 119.7 million dozen eggs. (Source: "World Trade in Market Eggs". In *Foreign Crops and Markets*. USDA. Washington. Vol. 70. No. 25. June 20, 1955. p. 738.

³ "International Trade in Eggs in 1954". In *Intelligence Bulletin*. Published by the Commonwealth Economic Committee. London. Volume VII No. 11. April 1955. p. 18.

⁴ "Eggs". In *FAO Monthly Bulletin of Agricultural Economics and Statistics*. Vol. III. No. 10. Rome. October 1954. p. 15.

⁵ "Exports of Eggs". In *Intelligence Bulletin*. Published by the Commonwealth Economic Committee, London. Vol. VII. No. 11. April 1955, p. 19.

⁶ "Exports of Shelled Eggs". In *Foreign Agriculture Circular*. USDA. Washington. FPE 2-55. March 8, 1955. p. 3.

⁷ "Eggs". In *FAO. Monthly Bulletin of Agricultural Economics and Statistics*. Vol. III. No. 10. Rome. October 1954. p. 15.

The United States and Canada, except for the war period, were never large exporters. There is some movement of eggs either way across the border. However, the most important current outlets for U.S. shell eggs are Venezuela, Cuba, Mexico, and to a lesser degree other Caribbean nations.¹

As far as Canada is concerned, its shell egg exports have remained close to an average of seven million dozen during the past five years except in 1952 when exports increased to about 12 million dozen.² Most of the eggs in the period under review were shipped to the United States and Venezuela. The latter market is assuming increasing importance. By 1954, when total exports of shell eggs from Canada were 6.8 million dozen, Venezuela imported 3.2 million dozen or 47 per cent of Canada's total shell egg exports and the United States imported 2.4 million dozen or 35 per cent.

Consumption of Eggs.—Per capita consumption of eggs in North America is at present much greater than that of any other part of the world. United States consumption was estimated at 412 in 1954. Canadian consumption in 1954 was estimated at 293, the second highest in the world. Consumption in the Netherlands and Denmark is lower than in Western Germany and the United Kingdom,³ the main importing countries. Consumption in the main exporting and importing countries, except Australia, is now above the prewar levels.

Per capita consumption of eggs in North America, both in U.S.A. and Canada, increased in the postwar years, compared with that of prewar. However, consumption of eggs in continental Europe does not show any particular trend, except for a steady rise in Western Germany.

Egg Prices.—Because egg prices in the main exporting and importing countries are influenced by internal price policies, price movements in these countries have not followed a similar pattern after World War II. During the period 1951-53, egg prices reached the highest postwar level but showed a downward trend in 1954, reflecting a heavier production and increased competition on export markets.

The following table shows the average prices to producers for eggs in the main exporting and importing countries in recent years.

Average Prices to Producers for Eggs in Selected Countries.^a

	1952	1953	1954
	— (Canadian cents per dozen) —		
Australia.....	47.8 ^b	49.7 ^c	44.2
Canada.....	35.1	43.0	33.7
Denmark.....	40.9 ^b	39.9	35.9
Netherlands.....	49.3	45.8	42.0
Western Germany.....	65.4	60.8	56.5
United Kingdom.....	64.5	64.5	57.9
United States.....	41.6	47.7	36.8

^a The prices paid to producers for eggs are not strictly comparable, reflecting differences in the egg grading systems and quality standards.

^b 1952/53.

^c 1953/54.

¹ "United States Foreign Trade in Poultry and Eggs". In *The Poultry and Egg Situation*. USDA. Washington. PES-165. May-June 1953. pp. 27-28.

² "Shell Egg Exports". In *Poultry Products Market Report*. Canada. Department of Agriculture. Markets Information Section. Weekly Report No. 1. Ottawa. April 1, 1955.

³ Per caput consumption of eggs in 1953 was given as follows: Netherlands, 98; Denmark, 134; Western Germany, 160 (the 1954 figure); the United Kingdom, 198.

The agricultural policies affecting egg production and prices have been modified in recent years. In the United Kingdom, with the end of the Control Scheme, allocation and price control ceased in March, 1953. Producer prices also ceased to be prescribed by the Ministry of Food and are now influenced by market conditions except that statutory minimum prices are fixed at the Annual Price Review. If prices fall below that level a deficiency payment is made. The cost of this subsidy is estimated at \$72.9 million for the 1954-55 season.¹ The average guaranteed price to producers for the 1954-55 season was 4/- or 55 cents per dozen.

Prices to producers for eggs in Western Germany are influenced by Dutch and Danish egg prices since domestic eggs reach the market in sufficient quantities only during late winter and early spring months. However, the egg market is to some extent controlled by the Import and Storage Agency for Dairy Products. When necessary and when so instructed by the Government, this Agency may take action by buying eggs on the home market or from abroad and storing them in order to keep the market regularly supplied and avoid undue fluctuations in prices. The prices to producers have been kept above those in the main exporting countries.²

Prices to producers in Denmark and the Netherlands are related to earnings on the export markets. In the case of Denmark, the bulk of exports has been contracted to the United Kingdom in recent years (until July 1, 1954) at fixed prices, but higher returns have been secured on sales to other markets.³ The Netherlands has exported most of its eggs to Western Germany and thus obtained generally higher prices than Denmark. Within both countries a free market exists for eggs, and there are no price regulations. Prices in Australia are also related to prices received in the export markets. However, the Government provided a special grant of \$550,000 to help the Australian egg industry overcome problems in the 1953-54 season, when the trade was switched over from U.K.-Australia contract arrangements to a regular commercial basis.⁴

In the United States, the U.S. Secretary of Agriculture has discretionary powers to support the prices of eggs at any level up to 90 per cent of parity, but no support program has operated since 1950.^{5 6} In Canada price support for eggs was introduced in 1950 in the form of a storage program. The Order in Council, P.C. 367 in 1950, gave the Agricultural Prices Support Board authority to purchase eggs out of storage during appropriate periods of the season. The Board was also authorized to pay 38 cents per dozen for Grade A Large eggs and 36 cents for Grade A Medium eggs plus an allowance (not to exceed five cents per dozen) for carrying charges. The same prices and similar conditions were applied to the storage programs for the next four years, and the Order is valid in 1955.

¹ *Agriculture Abroad*. Department of Agriculture. Ottawa. Vol. X. No. 4. April 1955. p. 33.

² FAO. *Commodity Policy Studies No. 2. Survey of National Measures for Controlling Farm Prices in Western European Countries*. Rome. April 1953. p. 70.

³ The average price for Danish eggs exported to the United Kingdom was the following: 1950, 38 cents; 1951, 41 cents; and from 1952 to 1954, 46 cents per dozen. The average price in the other markets for the respective years was given as follows: 1950 and 1951, 57 cents; 1952, 55 cents; 1953, 53 cents and 1954, 48 cents per dozen. The prices shown simply represent the average declared value of exports to the United Kingdom and not actual contract prices, which have not been published.

⁴ *Agriculture Abroad*. Department of Agriculture. Ottawa. Vol. X. No. 1. July 1954. p. 7.

⁵ *Price Spreads on Poultry and Eggs*. Hearing before the Committee on Agriculture and Forestry, United States Senate. Eighty-Third Congress Second Session, on Price Spreads on Poultry and Eggs and Government Financing of the Poultry Industry. December 2 and 3, 1954. Washington, 1954.

⁶ *Dairy Produce*. Commonwealth Economic Committee. A Review of production, trade, consumption and prices relating to butter, cheese, condensed milk, milk powder, casein, eggs, egg products and margarine. London, 1954. p. 98.

LET THERE BE BREAD¹

On the cover page of the various reports published by the Food and Agriculture Organization of the United Nations, there is a crest showing a head of wheat and its motto—FIAT PANIS—"Let there be Bread". Over the past ten years, the resources of this international agency have been directed towards raising the nutritional level of the underfed people. During this period there has been a substantial increase in agricultural output. Total food production by 1953-54 was about 20 per cent above prewar and per capita production slightly exceeded that of the prewar period.

FAO can claim some credit for the progress made during the ten years. It provided a meeting place where nations could discuss the problems of food and agriculture. Never a policy-making body with administrative powers, yet it has stimulated action among nations and within countries. The Director General of FAO in his introductory remarks in the Program of Work and Budget for 1956 and 1957 had this to say:

"Never before in the history of the world has there been such inspiring evidence of helping hands extended across the seas and over political boundaries. It is this spirit of co-operation that generates the promise of plenty, and the peace that accompanies or results from it . . .

"It was in this spirit of co-operation that FAO was conceived among 38 nations in 1943. It was under the continuing influence of that spirit among 42 nations that FAO was born. It has been that spirit that has now brought 71 nations into effective co-operation through FAO. The role of FAO is to further the promise of that spirit."

Canada's interest in the FAO goes back to the days of the Hot Springs Conference in 1943. The United Nations Interim Commission on Food and Agriculture was established by this Conference. It was chaired by a Canadian and laid the groundwork for the first FAO Conference. This first Conference met during October 1945 in Quebec City at the Chateau Frontenac overlooking the historic Plains of Abraham. Since then Canada has continued to be an active participant. Her present share of the regular program is \$335,141 or 5.69 per cent of the annual \$6 million budget. Only five out of the 71 countries contribute more than five per cent. This sum does not include contributions to the technical assistance program. Canada is a member of the Council, the Committee on Commodity Problems, and the Consultative Sub-Committee on Surplus Disposal. A Canadian has been chairman of the co-ordinating Committee—a committee of individuals chosen by the Conference. This group reviews, advises and influences the program of work of the FAO. Other Canadians are members of the Headquarters staff in Rome or serve in the field on temporary assignments as technical experts. This latter group, numbering over 30, has served in various capacities in such countries as Afghanistan, Ceylon, Chile, Egypt, Finland, Greece, India, Iran, Iraq, Korea, Turkey and Yugoslavia.

During the ten years that FAO has been in operation, it has had to deal with problems arising out of food shortages and surpluses at alternating intervals. There were the proposals of the World Food Board and International Commodity Clearing House (ICCH), an Emergency Famine Reserve and at present there is a Consultative Sub-Committee on Surplus Disposal. It has also dealt with problems of a physical nature. It has organized committees concerned with locust control and with the eradication of foot and mouth disease. The Secretariat, with headquarters in Rome, also has the responsibility of collecting and compiling statistics and other information concerning nutrition and agricultural, forestry and fishery practices.

¹The following is a review article of *The Story of FAO* by Gove Hambidge, and published by D. Van Nostrand Company, Ltd., Toronto. 1955.

However, by far the greater part of the resources at the disposal of the Director General are devoted to technical assistance work in the economically developed countries.

The FAO has not been free of criticism. Some felt that the FAO was moving too quickly, others that it was moving too slowly. There are those who are sceptical. In part, these attitudes have been due to a lack of knowledge of the philosophy and functions of the FAO.

Recently, a book was published entitled "The Story of FAO". This book is well written and tells an interesting story—a story of hope, frustration and progress. The author, Gove Hambidge, is the North American Regional Representative of FAO. Mr. Hambidge was one of the group that met at Hot Springs in 1943, and has been connected with the Organization ever since. Mr. Hambidge early in May 1955 testified before the Canadian Senate Trade Relations Committee on the role of the FAO.

The author traces the growth of the FAO from its inception at the League of Nations where a realization came about of the extent of under-nourishment and incredibly poor living conditions; of the development of knowledge about the contribution that food makes to health and length of life; of the postwar depression (World War I) and unsaleable surpluses of food in some countries while many in those same countries were starving. The author also tells the story of the background of this international organization formed by wartime partners to deal with these problems.

Much of the book is devoted to detailed descriptions of current projects being carried out by the FAO and the efforts of many countries to raise the level of output and to improve their services in agriculture, nutrition, fisheries, forestry and statistics. The author stresses the technical assistance and technical co-operation aspects of FAO activities. He is fully justified in emphasizing this form of activity. In his book he puts it thus:

"Hundreds, perhaps thousands of scientists and other experts from many different countries are now scattered all over the world, pushing the frontiers of knowledge and its practical application further outward and helping to effect the innumerable adjustments in age-old institutions and ways that are needed to make new advances possible. Other thousands of young people from lands that have been thought of as backward are attending universities, colleges, and technical schools abroad and returning to work as experts in their own countries. If this is a slow and sometimes disheartening process, it is no more so than were the voyages of Columbus, Magellan, Frobisher, and Drake, which must often have seemed hopeless yet brought immeasurable results; no more so than the slow creaking of oxcarts across America to open a continent of opportunity. These great outgoing movements stir the imaginations of men, stretch their souls, focus their energies on big creative achievements."

The book however is not a critical appraisal of the work and accomplishments of FAO. This still needs to be done. The author is, however, motivated by a sense of urgency—that although the results have been gratifying, more must be done in area of food production. The FAO and its Member nations cannot ease off. The Director General in his Foreword to the FAO annual report, "The State of Food and Agriculture, 1954, Review and Outlook" had this to say:

"Over large areas of the world agricultural production is still well below its pre-war level in relation to population. Fully half the world's people are still inadequately housed, clothed and nourished . . . There is no sign of any slackening in the growth of human requirements, and to meet them is essentially not a short-term but a continuing problem!"

UNITED NATIONS PUBLICATIONS

Available from: Sales and Circulation Section, Dept. of Public Information, United Nations, New York, U.S.A.

In Canada: the Ryerson Press, 299 Queen St. West, Toronto; and Periodica Inc., 5112 Ave. Papineau, Montreal, 34.

World Economic Report, 1953-54. Dept. of Economic and Social Affairs. New York, 1955. pp. viii + 163.

The seventh annual U.N. report on world economic conditions. Part I reviews the *Major National Economic Changes in Economically Developed Private Enterprise Economies, Centrally Planned Economies and Economically Under-Developed Countries*. Part II analyses the changes in *International Trade and Payments*; its four chapters are concerned with *Major Developments in World Trade, International Trade and Payments of the United States, Western Europe and Japan, International Trade and Payments of Primary Producing Countries and International Trade of Eastern Europe and Mainland China*.

The highlights of the report may be summarized as follows: In 1954 world trade exceeded by seven per cent the all-time record established in 1953; the industrial countries of western Europe accounted for most of the increase. Industrial output and employment continued to advance in Western Europe but declined in North America. The end of the year, however, was marked by evident signs of recovery in both the United States and Canada.

Economic developments in the centrally planned economies of eastern Europe reflected the greater emphasis placed on the output of consumer goods in the economic policies adopted in 1953. However, these policies were modified at the end of 1954 when the Union of Soviet Socialist Republics and Hungary reasserted the priority of heavy industry and made, simultaneously, a considerable increase in the proportionate resources allocated to the development of agriculture. In Latin America and southeast Asia the deterioration in the terms of trade was halted and industrial production showed signs of recovery by the end of the year.

Economic Bulletin For Europe. Vol. 7, No. 1, May 1955. Prepared by the Research and Planning Division, Economic Commission for Europe.

The May 1955 issue of the *Economic Bulletin* includes a detailed review of *Current Economic Developments in Europe* and an analysis of *Index Numbers of Foreign Trade of Western European Countries*.

The review of economic developments deals with *The Economic Situation in Western Europe; Emergence of Bottlenecks in Production of Basic Materials and Shipping; Labour Problems; The Demand for Western European Exports; Government Policy to Control Prices and Internal Demand; and Developments in the Soviet Union and Eastern Europe*.

Methods of Collecting Current Statistics. Prepared by R. D. Narain, Economics Division, Food and Agriculture Organization. Rome, Italy. March 1955.

A loose-leaf handbook which supplies a description of the methods used in the collection of agricultural statistics in most countries of the world.

In spite of the wide differences in statistical development among these countries, the Economics Division of FAO has succeeded in designing a standard pattern for the classification of statistical methods. In the *Foreword* the Director of the Economics Division states that "the information assembled according to this pattern will go some way towards meeting the need for a comparative understanding of the methods used in different countries. In particular it is hoped that this study will assist countries to view their own statistical systems in a wider perspective and make apparent possibilities for improvement."

An Annual Review of World Production and Consumption of Fertilizers—1954. November 1954. pp. ii + 105.

A review prepared by the Land and Water Use Branch of the Agriculture Division of FAO. It deals with *World Production of Fertilizers; Forms in which Fertilizers are Produced; and World Consumption of Fertilizers*. It also provides a *Review of Production and Consumption by Continents and by Countries* and discusses the *Future Prospects in Production and Use of Fertilizers*.

OTHER PUBLICATIONS

Farm Management Economics. Heady, Earl O. and Harold R. Jensen. New York, Prentice-Hall, Inc., 1955. pp. ix and 645.

The two major objectives of *Farm Management Economics* are: 1) to assemble the subject matter and principles which constitute a minimum for understanding the economics of farming, and 2) to provide in book form the approach and material suitable to a farm management course for undergraduate students.

By drawing examples from agronomy, animal husbandry and engineering the authors have demonstrated how a positive application of economic principles may insure maximum returns to the farm business. Indeed, the main achievement probably consists in the authors' successful integration of the technical and economic aspects of farm production.

Contemporary Readings in Agricultural Economics. Halcrow, Harold G., Editor. New York, Prentice-Hall, Inc. 1955. pp. xix and 411.

A collection of significant writings on various phases of agricultural economics. It includes essays on economic growth and development, farm production, farm prices, agricultural marketing, price and income policy, problems and policies in land economics, and farm finance and employment.

The editor arranged the material supplied in the 41 essays in such a manner as to stress the macro-economic, or broad policy, aspects of agricultural economics. He considered that this approach would provide the collateral reading most necessary to people engaged in specialized work such as farm management, marketing, or price analysis. He is also confident that this is "the type of reading to broaden one's view of certain modern economic problems involved in price supports, surpluses, inefficiency, and low farm income".

Report of the Canadian Farm Loan Board for the Year Ended March 31, 1954. Ottawa, The Queen's Printer and Controller of Stationery. 1954. pp. 18.

This annual report of the Canadian Farm Loan Board covers its operations for the year ended March 31, 1954. During that year a total amount of \$7,816,750 was approved for loans, an increase of about 33 per cent over the previous year. First mortgage loans outstanding, at March 31, 1954, totaled 17,267 and amounted to \$33,862,294; the corresponding figures for second mortgage loans outstanding were 2,828 and \$1,212,525.

The report includes a *Balance Sheet; a Statement of Surplus and Reserves; a Statement of Income and Expenses; a Statement of Administrative and General Expenses; Particulars of Loans Secured by Mortgages; Particulars of Accounts Secured by Agreements for Sale; a Statement by Provinces of Farm Loans Approved; a Statement by Provinces of Farm Loans Disbursed for the Year Ended March 31, 1954 and another for Farm Loans Disbursed to March 31, 1954*. The last pages of the report provide *Information for Applicants for Loans*.

THE ECONOMIC ANNALIST

A BIMONTHLY REVIEW OF AGRICULTURAL BUSINESS

MARKETING SERVICE, ECONOMICS DIVISION

J. F. BOOTH, Chief

OCTOBER 1955

Vol. XXV, No. 5

CONTENTS

	Page
The Economic Situation.....	99
Review of Canadian Agricultural Policies. . <i>Margaret I. Dunbabin</i> .	101
Changes in Food Consumption Patterns..... <i>L. E. Drayton</i>	105
Forecasting Hog Marketing..... <i>L. B. Kristjanson</i>	108
Sunflower production on Manitoba Farms..... <i>G. B. McNeill</i>	114
Other publications.....	120

EDITORIAL COMMITTEE:

G. P. Boucher, L. E. Drayton and Frank Shefrin

Published by Authority of the Right Honourable James G. Gardiner
Minister of Agriculture

ANNUAL AND MONTHLY INDEX NUMBERS
WHOLESALE PRICES, FARM PRICES AND LIVING COST INDEXES

Year	Wholesale Prices 1935-1939=100				Farm Prices of Agricultural Products 1935-39=100 (e)	Commodities and Services used by Farmers 1935-39=100		Consumer Price Index (1949=100) (h)	Food Index (1949=100) (i)	Index of industrial production (1935-39=100) (j)
	(a) General Wholesale Index	(b) Farm Products	(c) Field Products	(d) Animal Products		(f) Equipment and Materials	(g) Composite Index			
1913.....	83.4					85.4		49.2	44.4	
1914.....	85.4					90.2	85.3	49.6	46.0	
1915.....	91.8					96.9	91.6	50.3	46.8	
1916.....	109.8					101.7	100.5	54.2	51.8	
1917.....	148.9					140.7	140.5	63.7	66.9	
1918.....	166.0					164.1	160.2	72.0	76.9	
1919.....	174.7					169.1	167.9	73.8	82.2	
1920.....	203.2					190.1	186.5	90.5	94.4	
1921.....	143.4					147.4	152.5	80.9	72.5	
1922.....	126.8					124.6	134.1	74.9	61.5	
1923.....	127.7					118.3	130.6	75.2	61.9	
1924.....	129.5					122.3	131.9	74.0	60.7	
1925.....	133.8					123.2	131.8	74.6	63.4	
1926.....	130.3	144.4	158.5	130.2		119.9	130.6	75.9	66.6	
1927.....	127.3	138.6	149.4	127.8		119.9	131.2	74.6	65.3	
1928.....	125.6	136.3	134.3	138.2		118.3	129.3	75.0	65.6	
1929.....	124.6	140.8	137.2	144.4		117.6	127.9	75.8	67.1	
1930.....	112.9	119.5	105.8	133.3		105.6	117.0	75.3	65.6	
1931.....	94.0	78.9	65.0	92.7		92.2	100.9	67.9	51.4	
1932.....	86.9	65.5	60.4	70.5		89.3	93.3	61.7	42.8	
1933.....	87.4	69.3	69.3	69.2		88.8	89.8	58.8	42.3	
1934.....	93.4	83.5	80.5	86.5		96.8	95.5	59.6	46.2	
1935.....	94.4	89.2	84.4	94.1	88.0	95.6	95.4	59.9	47.2	85.6
1936.....	96.7	97.9	102.2	93.7	96.9	98.7	98.1	61.1	48.8	94.6
1937.....	107.8	117.4	128.9	106.0	119.7	108.4	105.3	63.0	51.4	108.0
1938.....	102.0	102.9	100.9	104.8	105.0	101.7	101.7	63.7	51.7	102.0
1939.....	99.2	92.6	83.7	101.5	91.8	95.7	99.3	63.2	50.2	109.7
1940.....	108.0	96.1	85.4	106.7	96.8	101.8	106.8	65.7	52.6	131.4
1941.....	116.4	106.6	88.9	124.4	110.2	107.8	116.1	69.6	57.9	164.8
1942.....	123.0	127.1	109.7	144.6	133.1	119.2	131.6	72.9	63.4	195.7
1943.....	127.9	145.4	129.0	161.8	157.8	122.4	143.4	74.2	65.2	208.5
1944.....	130.6	155.3	144.5	166.1	172.4	126.0	148.0	74.6	65.5	212.4
1945.....	132.1	166.4	162.5	170.2	185.7	125.9	152.1	75.0	66.3	187.2
1946.....	138.9	179.5	177.9	181.2	204.1	128.0	157.0	77.5	70.0	171.9
1947.....	163.3	192.2	184.1	200.2	215.8	139.5	170.4	84.8	79.5	187.8
1948.....	193.4	232.1	200.6	263.7	255.8	173.1	197.4	97.0	97.5	196.3
1949.....	198.3	228.7	191.9	265.4	255.4	180.3	204.1	100.0	100.0	199.6
1950.....	211.2	236.7	191.9	281.4	260.8	189.9	210.4	102.9	102.6	211.5
1951.....	240.2	268.6	200.4	336.9	296.8	206.0	230.0	113.7	117.0	226.5
1952.....	226.0	250.2	223.0	277.5	274.4	215.8	243.1	116.5	116.8	232.9
1953.....	220.7	221.6	179.4	263.8	250.4	207.4	239.8	115.5	112.6	248.4
1954.....	217.0	210.4	164.6	256.2	233.4	203.3	235.9	116.2	112.2	
1954										
July.....	217.4	219.6	177.0	262.1	241.1			116.2	112.1	238.5
August.....	215.8	208.4	168.7	248.2	231.2	201.9	238.7	117.0	114.4	246.7
Sept.....	215.3	204.6	163.8	245.5	227.5			116.8	113.8	253.7
Oct.....	214.3	201.7	162.9	240.5	220.0			116.8	113.8	256.0
Nov.....	214.9	204.2	165.2	243.1	219.3			116.8	113.4	254.4
Dec.....	215.4	205.3	164.6	245.9	219.7			116.6	112.6	240.6
1955										
Jan.....	215.7	207.0	165.6	248.4	220.9	205.8	231.8	116.4	112.1	238.2
Feb.....	217.4	206.7	167.6	245.8	222.3			116.3	111.5	248.0
Mar.....	217.4	203.7	166.1	241.3	221.6			116.0	110.7	251.8
Apr.....	218.5	212.7	186.8	238.7	228.8	204.7	240.3	116.1	111.0	259.2
May.....	217.8	213.3	183.2	243.4	229.2			116.4	112.3	265.2
June.....	218.7	212.2	174.3	250.0	229.3			115.9	111.0	275.2
July.....	218.4	209.8	170.0	249.5	229.2			116.0	111.5	
August.....	219.6	204.8	159.0	250.6				116.4	112.4	

(a) Canada. Dominion Bureau of Statistics, Labour and Prices Division. *Prices and Price Indexes*. Ottawa, Monthly.

(b) Ibid. (a). Wholesale prices of products of Canadian farms.

(c) Ibid. (a). Wholesale prices of grains, hay, tobacco and potatoes.

(d) Ibid. (a). Wholesale prices of animals and animal products.

(e) Canada. D.B.S., Agriculture Division. *Index Numbers of Farm Prices of Agricultural Products*. Ottawa, Monthly.

(f) Canada. Dominion Bureau of Statistics, Labour and Prices Division. *Price Index Numbers of Commodities and Services Used by Farmers*. Ottawa, Jan., Apr. and Aug. Includes prices of commodities in 8 groups including farm implements, building materials, gasoline, oil and greases, feed, fertilizer, binder twine, seed and hardware.

(g) Ibid. (f). Includes the 8 commodities indicated above plus tax rates, interest rates and farm wage rates.

(h) & (i) Canada. Dominion Bureau of Statistics, Labour and Prices Division. *Prices and Price Indexes*. Ottawa, Monthly.

(j) Canada. Dominion Bureau of Statistics. *Canadian Statistical Review*. Ottawa. Monthly.

ECONOMIC SITUATION

Gross National Product.—Canada's gross national product increased at an accelerated rate during the second quarter of 1955, reflecting a sharp advance in the expansion in economic activity which began in the last half of 1954.

The rate of gross national product is estimated at \$26.2 billion, a gain of four percent over the rate for the first quarter and of nine percent above the annual average of \$24.0 billion for 1954. About \$300 million of the increase over last year is attributable to an estimated higher crop production in 1955.

The general level of activity in the non-farm sector of the economy in the second quarter of 1955 was eight percent above the 1954 annual average and also eight percent above the peak reached in the third quarter of 1953. The recent advance appears to be more widely dispersed than that which occurred between the last quarter of 1954 and the first quarter of 1955. Most industrial groups shared in the general advance in production. Related indicators suggest that, after adjustments for seasonal factors, about half the production gain from the first to the second quarter occurred in manufacturing.

The rise in manufacturing production, both durable and non-durable, in recent quarters has brought the level of production in the industry to a point about eight percent above the level for the second quarter of 1954. However, durable production still had not reached the high levels of the second quarter of 1953, but production of non-durable goods was running at a rate about four percent above the mid-1953 level. Outside of the manufacturing field, the services, construction, and most of the primary industries made substantial contributions to the rise in output.

Accompanying the gains in production, the total number of persons with jobs in the second quarter was about three percent higher than in the same period in 1954. The number of persons with jobs in the non-agricultural sector rose by four percent. At the same time, average hours worked per week in manufacturing were about two percent higher. The number of persons without jobs and seeking work had declined by two percent below the level of last year's second quarter.

Major gains in most of the important segments of income and demand accompanied the vigorous pace of economic

activity in the first six months of this year. Both personal and business incomes recorded substantial gains. On the expenditure side, major sources of strength in the first half of the year were increases in consumers' outlays, substantially higher levels of house building activity, and a sharp rise in exports of goods and services. Imports also increased substantially. On the other hand there were minor declines in outlays for new non-residential construction and machinery and equipment.

Prices.—Canada's consumer price index recorded a 0.3 percent increase during the month of July; the August 1 index (1949=100) stood at 116.4 compared with 116.0 on July 2 and 117.0 a year previously. The rise during July was mainly due to a 0.8 percent increase in the food index from 111.5 to 112.4. Food items recording price increases were butter, eggs, grapefruit, beef and lamb and items recording decreases were margarine, apples and fresh vegetables, notably tomatoes and potatoes. The August food index was 1.8 percent below the corresponding index of last year.

There was a small increase in the shelter index, reading 129.8 at August 1, 129.6 one month earlier and 127.0 a year earlier. During July rents remained unchanged but home-ownership costs advanced slightly. Clothing costs remained stationary in July; the index was 107.8 compared with the August 1954 index of 109.6. The index of household operation showed no change during July with a reading of 115.8 or 1.2 percent under the corresponding index a year previously. The remaining component of the consumer price index, namely, other goods and services showed a 0.3 percent increase over the reading one month, and one year, earlier of 117.7; the August 1 index stood at 118.0.

Wholesale prices were, on the average 0.5 percent higher in August, 1955 than in the previous month of July and 1.7 percent higher than in August 1954. The general wholesale index (1935-39=100) stood at 219.6 in August, 218.4 in July and 215.8 in August, 1954.

Prices of Canadian farm products at terminal markets dropped 1.7 percent during August, the composite index registering 204.6 on August 26 and 208.0 on July 29 (1935-39=100). The field product index declined 8.3 percent during the month from 170.1 to 156.0 and

was responsible for the drop in the composite index. Lower potato prices was the main cause of the lower index reading, and smaller declines occurred for western flax, rye, hay and eastern corn. Western barley and oats reflected the change in price from the interim payment for the 1954-55 crop year to the initial payment for the 1955-56 crop year. Eastern rye, wheat and barley prices recorded an increase during the month.

Prices of animal products increased 2.8 percent during August, the index moving from 246.0 to 253.0. Prices advanced for hogs, eggs, calves, western steers and lambs, and eastern cheese milk. Decreases were recorded in the prices of eastern lambs, poultry and raw wool.

The index number of farm prices of agricultural products registered a one-tenth of a point decrease for the month of July from 229.3 at the end of June to 229.2 one month later (1935-39=100). Poultry and egg prices were higher, potato prices were lower; there were no changes in the prices of grains, live stock and dairy products.

Farm Cash Income.—Cash income to Canadian farmers (excluding Newfoundland farmers), from the sale of farm products and participation payments on previous years' grain crops was estimated at \$1,030.8 million for the first six months of 1955. This preliminary estimate may be compared with \$1,186.0 million and \$1,060.8 million realized during the corresponding periods of 1953 and 1954 respectively and the all-time high January-June cash income of \$1,241.7 million realized in 1951. Items contributing to the decline in Canadian farm income were wheat participation payments, oats and hogs.

Farm cash income from the sale of wheat during the first six months of 1955 totaled \$145.5 million compared with \$132.4 million for the same period of last year. Wheat participation payments for the six-month period totaled \$26.5 million and were less than half the amount paid out in the corresponding period of 1954. Income from the sale of oats decreased from \$21.4 million during the first six months of 1954 to \$11.7 million in the corresponding period of 1955. Prices averaged somewhat higher this year but marketings of oats were much lower. Returns from the sale of potatoes were estimated at \$18.5 million compared with \$9.6 million for the January-June period of 1954.

Revenue from the sale of livestock decreased 8.9 percent from the six-month total of 1954; \$362.1 million for the first half of last year and \$329.9 million for the first six months of this year. Income from the sale of cattle rose slightly but hog returns were considerably lower—\$142.3 million in the first half of this year and \$179.1 million in the corresponding period of last year. Hog marketings were larger for the current year but prices were much lower than last year. Income totals for other agricultural items showed only minor changes.

Grains.—Preliminary data place Prairie farmers' marketings of the five major grains during the 1954-55 crop year at 496.9 million bushels, a considerable decrease from the revised 1953-54 total of 608.3 million bushels. Deliveries of each crop in million of bushels are shown below with corresponding 1953-54 figures in brackets: wheat 300.7 (397.0); oats, 67.0 (90.4); barley, 108.6 (101.4); rye, 11.9 (12.2); and flaxseed, 8.8 (7.4).

Carry-over stocks at July 31, 1955 were estimated at 668.8 million bushels, about 24 percent less than the carry-over stocks of 876.2 million bushels a year before but well above the ten-year (1945-54) average of 360.4 million bushels. Carry-over stocks by individual grains, in millions of bushels, with July 31, 1954 figures in brackets are as follows: wheat, 481.4 (582.7); oats, 81.1 (125.8); barley, 87.2 (145.9); rye, 17.9 (19.3); and flaxseed, 1.2 (2.6).

Canada's grain exports during the past crop year showed a decline of 71.0 million bushels from the 1953-54 total and of 14.9 millions from the ten-year (1943-44—1952-53) average. A breakdown of total exports indicates that shipments of wheat and wheat flour totaled 251.8 million bushels, slightly less than the shipments of 255.0 million bushels in the previous crop year. Wheat shipments to the United Kingdom were substantially higher than during the previous crop year. The major decline in grain exports was due to reduced oats shipments; 21.6 million bushels in 1954-55 compared with 69.9 million bushels during the previous crop year. Exports of oats to the United States were lower by some 51.1 million bushels. Barley shipments totaled 77.1 million bushels, down about 13.0 millions from the 1953-54 level despite a substantial increase in shipments to the United Kingdom. Rye and flaxseed exports were as follows, with corresponding 1953-54 figures in brackets: rye, 9.3 million bushels (16.8); and flaxseed, 6.3 (5.2).

REVIEW OF CANADIAN AGRICULTURAL POLICIES

MARGARET I. DUNBABIN

The following summary reviews briefly according to purpose Canadian policies affecting agriculture. In most instances the discussion of activities is confined to those in the federal sphere. The material is assembled under the major headings of Production, Marketing and Prices, External Trade and Membership in International Organizations.

Production

Direction.—There is no government direction of agricultural production in the sense that the government intervenes to control the free choice of the farmer in his cropping program. Prospects for the coming season are reviewed each year at a federal-provincial conference held in late November or early December. The conference is attended by federal and provincial ministers of agriculture, federal and provincial government officials and farmers' representatives. The review of the agricultural situation and outlook presented at the conference is widely publicized to assist farmers in planning their individual programs.

Research and Extension Activities.—The federal Department of Agriculture, through its Science Service and its Experimental Farms Service, carries out research in agricultural products, in co-operation with other government departments, both federal and provincial. The Science Service has laboratories throughout Canada carrying out investigations on practical problems in agriculture and forestry. The Experimental Farms Service, with headquarters in Ottawa and branch stations, illustration stations and laboratories in important farming districts throughout Canada, provides facilities for research experimentation and demonstration in areas where the results of such work may have direct application. The results of agricultural research are made available to the public, by the Information Service, through bulletins, newspaper articles and other media.

The Economics Division of the federal Department of Agriculture co-operates with provincial departments of agriculture, universities and agricultural colleges in its work in the fields of land economics and of farm organization and management. The results of such studies are published so that they can be made available to interested persons.

Extension work as such is a provincial function. District representatives are appointed by provincial departments of agriculture.

Production Incentives.—Federal financial assistance is provided in a number of forms to encourage the production of high quality commodities, the use of feed and fertilizer and better storage of products. Premiums are paid on hogs in the top two grades, and on high scoring cheese. Assistance is given in the purchase of pure-bred live stock for breeding purposes. Part of the freight is paid on western grains and millfeeds moving to eastern Canada and British Columbia for use as animal feed. A subsidy is paid on lime used in eastern Canada and British Columbia. Assistance is available for the improvement and amalgamation of cheese factories and for the construction of public cold storages and potato warehouses. Part of the cost of replacing lead contaminated maple syrup buckets is paid by the federal Department of Agriculture.

Control Measures.—The federal Department of Agriculture administers legislation dealing with the health of animals, plant protection and the control of seeds, feeding stuffs, fertilizers, pesticides, hay, straw and binder twine. Under the Animal Contagious Diseases Act control is exercised over the export and import of livestock and livestock products, with a view to preventing the spread of livestock diseases and the sale of diseased or unwholesome livestock

products. The act also provides for the control of named animal diseases within Canada and the operation of programs for the eradication of non-reportable animal diseases such as tuberculosis and brucellosis. The sections dealing with meat inspection in the Meat and Canned Foods Act apply to packing plants, livestock for slaughtering and meat, where the meat products enter into interprovincial or export trade. These sections are incorporated in the Meat Inspection Act, assented to on June 28, 1955, and will replace them when the new act is proclaimed.

The Destructive Insect and Pest Act applies to export and import shipments of plants and plant products and to the certification of seed potatoes. Some domestic insect and plant disease quarantines are maintained and preventive measures are enforced against the introduction of new pests, as well as control or eradication measures against pests established in Canada. Legislation dealing with supplies used by farmers is contained in the Pest Control Products Act, the Feeding Stuffs Act, the Fertilizers Act, the Hay and Straw Inspection Act, the Inspection and Sale Act and the Seeds Act.

Conservation.—The Experimental Farms Service in co-operation with the provinces, undertakes a systematic reconnaissance soil survey of all present and potential agricultural areas, with special surveys in areas where there is need for immediate information.

Federal measures for land reclamation and development and the control of water resources are provided in the Prairie Farm Rehabilitation Act, the Maritime Marshland Rehabilitation Act, and the Canada Water Conservation Assistance Act. The projects undertaken under these acts are joint federal-provincial responsibilities, the respective function of each government being set out in the agreement for each project.

Farm Credit.—Farm credit is provided by both federal and provincial governments. The federal measures are the Canadian Farm Loan Act, which set up a board to administer the granting of credit on the security of farm lands; the Farm Improvement Loans Act which authorizes the provision of short and intermediate term credit for the improvement and development of farms and for the improvement of living conditions on farms; the National Housing Act under which loans may be secured for constructing new houses on farms; and the Veterans Land Act which authorizes the provision of credit to veterans with farming experience who wish to become full time farmers or those with a steady income who wish to obtain a small holding.

Crop Failure Assistance.—Direct assistance to western farmers suffering losses due to crop failure is provided in the Prairie Farm Assistance Act. An act passed at the recent session of Parliament extends the assistance to land which cannot be seeded or summerfallowed because of natural causes beyond the farmer's control. Under the act there is collected a one per cent levy on all western grain marketed in Canada. Collections are normally not sufficient to meet payments. Deficits in the fund established under the act are met from Consolidated Revenue.

Agricultural Population.—Most Canadian farms are family operated; at the time of the 1951 census there were 623,091 farms, and only 137,916 wage earners in agriculture. The total labor force in agriculture was 826,759.

There is no federal legislation dealing with agricultural labor; no minimum wage standard is established and farm workers are excluded from the provisions of the Unemployment Insurance Act. The farm population is, however, eligible for family allowances and old age pensions.

A farm labor program operates for the movement of farm workers between provinces and for the recruitment, movement and placement of other workers in employment in agriculture and related industries. The federal government signs annual agreements with co-operating provinces and provides financial assistance.

Marketing and Prices

Federal-Provincial Responsibilities.—Federal jurisdiction in marketing applies to articles entering interprovincial and export trade. Provincial jurisdiction applies only within the province and the method of raising finances for the operation of marketing schemes should be such that no levies can be construed as indirect taxation, provincial authority in the taxation field being limited to the imposition of direct taxation for raising revenue for provincial purposes. The federal government in 1949 passed the Agricultural Products Marketing Act empowering the Governor in Council to grant to any board operating under a provincial marketing law powers in interprovincial and export trade similar to those which it exercises within the province.

Grading and Standardization.—The federal government has established grades and standards for most agricultural products, which apply on products in interprovincial and international trade. In many instances provincial governments have passed complementary legislation establishing similar grades and standards within the province and enabling federal inspectors to enforce the regulations intraprovincially. The acts establishing federal grades and standards are the Canada Grain Act, the Canada Dairy Products Act, the Fruit, Vegetables and Honey Act, the Live Stock and Live Stock Products Act, the Maple Products Industry Act and parts of the Meat and Canned Foods Act. On June 28, 1955, Royal Assent was given to the Canada Agricultural Products Standards Act which consolidates all these statutes, with the exception of the Canada Grain Act. The new act will be proclaimed when regulations covering specific products have been prepared under it.

This statute provides that grades for agricultural products may be established by regulation and that grades, packing and marking requirements are to apply on movements in interprovincial and export trade. Dealers may be licensed and inspectors appointed.

The Food and Drugs Act and regulations relate to the safety, purity, quality, labelling and advertising of foods. In some cases there are regulations under this act parallel to those under the grading and standardization acts. The federal Department of National Health and Welfare administers the act.

Canadian Wheat Board Act, 1935.—The Canadian Wheat Board set up under the act is the sole marketing agency for all wheat, oats and barley produced in the three prairie provinces, in certain areas of British Columbia and in a small section of Ontario. It operates an annual pool for these three crops and makes a guaranteed initial payment to producers, with subsequent payments as pool receipts warrant. At the specified delivery points therefore the same price is paid every producer on deliveries of grain of the same grade. All international trade in wheat, oats and barley and their products is subject to licensing by the Canadian Wheat Board.

Agricultural Prices Support Act, 1944.—This federal legislation may be used to provide price support for all agricultural products except wheat. To be eligible for support commodities must be "designated" by order in council. Prices may be supported by outright purchase by the government or by underwriting the market through guarantees or deficiency payments. There is no statutory provision for determining the level of price support; this is decided by the government in each case on the recommendation of the Agricultural Prices Support Board. Price support measures are at present in effect for butter, eggs and hogs. The act has been used at various times since 1946 to support in addition prices of apples, potatoes, dried white beans, dry skimmed milk, extracted honey and cattle.

Agricultural Products Co-operative Marketing Act, 1939.—This legislation is designed to assist farmers in organizing and administering marketing pools for the orderly marketing of their products. The Minister of Agriculture may, with the approval of the Governor in Council, enter into an agreement with a marketing group operating on a co-operative plan providing for a pooling

of returns on a grade basis with deductions for various handling charges. The act authorizes a maximum initial guarantee by the federal government of 80 per cent of the average selling prices in the preceding three years. The act has been used by producers' groups to market oats, barley, rye, corn, peas, flax, cheese, apples, apricots, peaches, prunes, potatoes, onions, honey, forage crop seeds and ranch-bred fox and mink pelts.

Provincial Marketing Legislation.—Marketing boards are in operation to a greater or less extent in all provinces except Newfoundland, Quebec and Alberta. Provincial marketing legislation authorizes the setting up of marketing schemes to apply on specified products in designated areas within the provincial boundary. These schemes are administered by a local board, usually of growers' and dealers' representatives, which is controlled by a provincial marketing board of government officials. Local boards may exercise regulatory powers over marketing, including the setting of prices and control of sales, or may act as price negotiating committees in the case of products for processing. Boards in some instances appoint a single selling agency through which products under control must be marketed.

Milk control legislation has also been enacted by provincial legislatures and milk control boards operate within the provinces.

External Trade

Import Restrictions and Tariffs.—There is no authority under the Export and Import Permits Act to control imports except in very limited circumstances. These relate to controls required to administer intergovernmental agreements and on products which are subject to price support or government trading monopolies. Butter is the only product for which an import permit is required under this legislation.

No import quotas are in effect on any product. No exchange controls are in operation.

Canada has a three column tariff, with rates prescribed under the headings British Preferential, Most Favoured Nation and General. In addition there are rates lower than the British Preferential which apply on products specified in trade agreements with certain Commonwealth countries. The British Preferential tariff applies on direct shipments from the countries specified in the Customs Tariff. The list includes most Commonwealth countries. It may be extended to others by order in council. The Most Favoured Nation tariff may also be extended by order in council. It applies on imports from most non-Commonwealth countries with which Canada trades. The General Tariff, with rates usually higher than those in the two other categories, applies on imports from all other countries. Customs administration procedures are laid down in the Customs Tariff and the Customs Act.

Export Encouragement or Restriction.—The Department of Trade and Commerce has trade commissioners stationed in all countries in which Canada has a considerable trade interest. At the end of 1954 the number of officers on the foreign service force was 93, stationed in 53 offices abroad. Trade promotion is one of the major activities of this service. Officers with specialized agricultural knowledge are stationed in Argentina, Australia, Denmark, the Netherlands, Switzerland, the United Kingdom and the United States.

Insurance for exporters is available under the Export Credits Insurance Act, which provides that the corporation set up under the act may enter into a contract with an exporter to insure him against loss in connection with the export or agreement to export of goods by reason of the unavoidable failure of the exporter to recover the selling price of the goods.

Export permits may be required under authority of the Export and Import Permits Act. Agricultural products on the export control list are butter and pancreas glands of cattle, calves and swine. In addition the export of wheat, oats and barley is subject to licensing by the Canadian Wheat Board.

Membership in International Organizations

Canada has played a prominent part in the establishment and conduct of a number of international organizations affecting agriculture, including the Food and Agriculture Organization, the General Agreement on Tariffs and Trade, the Colombo Plan, the International Wheat Agreement and the International Sugar Agreement. Canada has signed the International Plant Protection Convention.

CHANGES IN FOOD CONSUMPTION PATTERNS*L. E. Drayton*

Food consumption patterns change slowly but continuously over time. The reason for this is that the economic and social pressures which influence what people eat are of a variable nature. Supply and consequently prices of specific foods vary from year to year. Income levels are also variable. Technological changes in food production and marketing are always underway with consequent effects on both prices and quality or attractiveness of specific foods. Consumers are continuously becoming better informed on dietary practices. These factors have reinforced each other during the past five years to cause a shift from energy foods to animal protein and protective foods despite a relatively small change in total expenditure on food.

Changes in Food Expenditure.—Aggregate Canadian food expenditure from 1950 to 1954 followed a sharp upward trend (Table 1). Population growth

Table 1—Changes in Food Expenditure 1950-1954

Year	Total Food Expenditure	Per Capita Food Expenditure	Retail Food Price Index	Per Capita Food Expenditure in Constant 1949 Dollars
	million dollars	dollars		dollars
1950.....	3,039	220	102.6	214
1951.....	3,488	249	117.0	213
1952.....	3,669	254	116.8	217
1953.....	3,740	253	112.6	225
1954.....	3,875	255	112.2	227

accounted for much of this trend. Although the change in per capita expenditure since 1951 appears negligible when no adjustment is made for price changes, when per capita expenditure is expressed in terms of 1949 dollars an increase of 6 per cent is revealed. Canadians have either been buying more food, better quality food, or more services with food.

There was a decline in the proportion of consumer income spent on food. From 1950 to 1953 food expenditures gradually declined from 24.0 to 22.6 per cent of disposable income.¹ In 1954, however, this trend was reversed; food expenditure increased to 23.1 per cent of disposable income.

Changes in Food Consumption.²—The increase in food expenditure as expressed in 1949 dollars has arisen at least in part from a shift away from the lower priced sources of food energy and to increased consumption of animal products and protective foods (Table 2).

¹ For further discussion see "Trends in Food Expenditure Patterns in Canada" in the *Economic Annalist*, Vol. XXIV, No. 4, August, 1954, p. 81.

² Although actual consumption of specific groups and classes of foods may differ from apparent domestic disappearance, the latter is for most foods the only available measure of consumption. Consequently, the two terms are used with identical meanings in this article.

Cereals, potatoes, sugars, syrups, fats and oils generally are low cost sources of food energy. These foods are characterized by high calorie yield per pound or per dollar spent. The retail weight of cereals consumed declined about six per cent from 1950 to 1953. Sugar disappearance declined almost six pounds per capita in 1952 and has since varied very little. Although per capita domestic disappearance of potatoes has been more erratic, with potato supplies and prices varying sharply from year to year, the best available statistics indicate that the 1950 level of consumption exceeded that of any subsequent year by at least 15 per cent. Consumption of fats and oils per person has varied from year to year with no marked trend during this period. In general, this trend for decreasing consumption of energy foods has persisted with some interruption during World War II, throughout the entire period for which satisfactory data on Canadian food consumption are available.¹

Apparent domestic disappearance of animal protein foods has on the other hand reversed a downward trend of the years immediately following World War II.² Per capita meat disappearance was stable from 1950 to 1952 but rose eight pounds in 1953 and another four pounds in 1954 for an over-all increase of almost 10 per cent during this five-year period. The increase in consumption of poultry and fish in the four-year period 1950 to 1953 was proportionately

Table 2—Trends in Per Capita Apparent Domestic Disappearance of Major Food Classes, 1950—1953

Food	Unit of Measurement	1950	1951	1952	1953
Cereals.....	Retail weight.....	172.8	171.5	167.5	162.2
Potatoes.....	Retail weight.....	191.0	157.0	147.0	158.0
Sugars and Syrups.....	Sugar content.....	108.3	102.8	103.8	101.3
Pulses and nuts.....	Retail weight ^a	12.9	12.5	10.3	11.3
Fruits ^b	Fresh equivalent.....	182.9	200.6	212.1	218.0
Vegetables.....	Fresh equivalent.....	94.5	88.6	90.2	91.3
Oils and Fats.....	Fat content.....	43.9	42.0	43.4	42.4
Meats.....	Carcass weight.....	133.7	133.7	134.0	142.3
Poultry and Fish.....	Edible weight.....	26.2	27.8	30.8	29.0
Eggs.....	Fresh egg equivalent.....	34.5	34.6	34.0	35.1
Milk and cheese.....	Milk solids.....	63.1	63.0	62.9	64.1
Tea and coffee.....	Primary Distribution Weight..	10.0	9.3	10.0	10.3

^a Retail weight for pulses, shelled weight for nuts.

^b Includes tomatoes.

greater; the 1954 estimate is not yet available. The per capita disappearance of the two other major animal protein food groups—dairy products other than butter, and eggs—has shown no marked change during this period.

Two of the remaining food classes, fruits and vegetables, are commonly termed protective foods, as they are required in the diet for minerals, vitamins and bulk and are not a major source of either calories or protein. Apparent per capita domestic disappearance of vegetables has shown a slight downward trend but the sharp increase in fruit consumption—20 per cent in four years—has much more than offset this. Gains in the consumption of citrus fruits have been sharper than those in the use of other fruits.

Factors Leading to Change.—As the foregoing analysis has indicated, per capita expenditure on food in terms of 1949 dollars has increased since 1950 and this increase has been associated with a shift from basic energy foods to animal protein foods and fruits. Why have these changes in consumption patterns occurred?

¹ Such data are available for the period since 1926 for some foods and for shorter periods for others.

² See "Per Capita Consumption of Certain Animal Foods in Canada", in *The Economic Annalist*, Volume XXII, No. 2, April 1952, p. 35, for an analysis of trends in the early post-war period.

Supply, in terms of food shortages has not been a major factor. Cereal grains and other energy foods have been abundant in Canada throughout the period. Exceptions to this have been short periods of limited supply of potatoes and butter.

Nevertheless, changes in relative price levels have in general favored the shift to animal protein foods. During the Korean War prices of many foods increased sharply. Some of the sharpest price increases occurred with meats and other animal protein products. However, since early in 1952 the prices of animal protein foods have had a downward trend. During 1953 and 1954 retail prices of beef products were near to and in some instances lower than their 1950 level. Prices of most other animal protein foods had also dropped considerably from the high levels of 1951. Pork products, however, were priced almost as high as in 1951 throughout most of 1953 and 1954. Retail prices of bread and other cereal products on the other hand, were higher in 1954 than in 1951. Prices of potatoes and butter had declined from 1951 or 1952 peaks but were still well above the 1950 level, although sugar prices were below this level. This mixed shift in price structure would appear to be on the whole favorable to increased consumption of animal protein foods.

Yet prices alone cannot account for all the shift that took place. If so, consumption of meats and other animal protein foods would have declined in

Table 3—Changes in Personal Disposable Income 1950-1954

Year	Total Personal Disposable Income	Per Capita Disposable Income	Consumer Price Index	Per Capita Disposable Income in Constant 1949 Dollars
	million dollars	dollars		dollars
1950.....	12,674	915	102.9	889
1951.....	14,663	1,047	113.7	921
1952.....	15,891	1,101	116.5	945
1953.....	16,725	1,132	115.5	980
1954.....	16,747	1,102	116.2	948

1951 and that of cereals would have increased. Use of sugar would have increased throughout this period. Moreover, despite the change in relative prices the energy foods remain the cheapest source of calories, and some of them are a cheaper source of protein and certain other nutrients than animal protein foods. Likewise, although the prices for some fruits declined somewhat between 1950 and 1953 those of others increased, with the result that the shift in the general level of fruit prices relative to other food prices was small, and probably a minor factor as an inducement to eat more fruit.

Income changes also were favorable to the shift toward more animal protein foods and fruits in the diet. Per capita disposable income increased each year from 1950 to 1953 even when measured in constant 1949 dollars. (Table 3.) This increase of about ten per cent accounts for the fact that the proportion of income spent on food declined up to 1953, without any reduction in per capita food expenditure. As a result of rising incomes and the absence of any widespread unemployment until late in 1953, a decreasing proportion of families probably felt a need to economize by restricting their consumption of the more expensive classes of food.

In a period of only five years the impact of technological changes in food production and marketing on food consumption patterns is not likely to be marked. Usually it takes many years for a technological change to become widely adopted. Nevertheless, there was at least one such change in the last

five years which has had a definite effect on these patterns. This was the introduction of concentrated frozen fruit juices. Although these were a new product in 1950, Canada was importing over 1.5 million gallons a year of frozen concentrated fruit juices by 1954. This provided a fresh equivalent of about eight pounds of fruit per capita. Even though frozen concentrated juices are a substitute for other fruit products, especially canned juices, the ready acceptance of these products is undoubtedly a significant factor in bringing about the increase in consumption of citrus fruits and fruits in general.

Finally, it should be noted that the shifts in consumption patterns have been in harmony with the main current of nutritional education. Nutritionists have long taught the importance of a balanced diet, which includes a considerable quantity of fruits and vegetables. Canada's food rules recommend one serving of citrus fruit or tomatoes or their juices and one serving of other fruit each day. More recently there has been much emphasis on the dangers of excess body weight. This has probably influenced many people to reduce their consumption of the basic energy producing foods. This would be another cause of the decline in apparent per capita domestic disappearance of these food groups.

To summarize, it would appear that changes in relative prices, the increase in income, technological developments in food marketing and the main emphasis of nutritional education during the past five years have all favored a shift from energy foods to animal protein and protective foods. Such a shift has occurred despite a small reduction in the proportion of consumer income spent on food.

FORECASTING HOG MARKETING

by

L. B. KRISTJANSON

Accurate forecasts of marketings of hogs would be useful to producers in planning their production programs; would aid packers in planning future operations; and would assist the government in formulating hog production and marketing policy.

Two bases for forecasting hog marketing would appear to present themselves. The first of these consists of early indications of the number of hogs being produced and the second of economic factors influencing production.

Early indications of production.—In its June 1st, and December 1st, farm surveys, the Dominion Bureau of Statistics obtain data on:

1. numbers of sows to farrow in the following six months;
2. numbers of pigs born in the previous six months;
3. numbers of pigs saved, i.e., having reached weaning age, in the previous six months;
4. numbers of pigs under six months of age on farms at the date of the survey.

Each of these figures should provide a good basis for estimating the number of hogs which will be marketed in subsequent periods.

About one year from the time that a sow is bred, the litter is ready for market. Therefore, assuming that farmers have made their decisions as to the number of sows to be bred, the number of sows that they report will farrow in the coming six months should be a good indicator of future marketings. The factors likely to disturb the relationship between numbers of sows to farrow and subsequent marketings are adverse weather conditions and disease during and after farrowing. Also, in the event that economic developments after breeding warrant a decrease in hog production, a farmer may market bred

sows. Subsequent developments in the production cycle would be expected to provide better means of forecasting marketings. For example, numbers of pigs born, pigs saved and pigs under six months of age on farms should provide progressively better indications of future marketings.

Analysis and Findings.—For purposes of analysis, the year was divided into two equal marketing periods: January 1 to June 30, and July 1 to December 31. The numbers of sows expected to farrow in each half-yearly period, as reported by the Dominion Bureau of Statistics, were compared with the commercial marketings¹ in the periods when most of these hogs would be ready for market. For example, the number of sows expected to farrow from June 1 to November 30, 1940, was compared with commercial marketings from January 1 to June 30, 1941, and so on. Similarly, the numbers of pigs on farms under six months of age, and the numbers of pigs on farms available for marketing at December 1, 1940, and June 1, 1941, were compared with commercial marketings from January 1 to June 30, 1941 and from July 1 to December 31, 1941 respectively. These comparisons were made for the years 1941 to 1954.

Table 1.—Coefficients of Determination and Standard Errors of Estimate for the Relations Between Percentage Changes from the Preceding Year in Commercial Marketings of hogs and (1) expected farrowing, (2) hogs under six months, and (3) hogs available for marketing, for Canada, for the periods specified

	Marketings Jan. 1—June 30	
	Coefficient of determination	Standard Error of estimate
		— per cent —
Sows to farrow June 1—Nov. 30.....	.81	13
Hogs under six months Dec. 1.....	.58	18
Hogs available for marketing Dec. 1 ¹	.73	14
	Marketings July 1—Dec. 31	
	Coefficient of determination	Standard Error of estimate
		— per cent —
Sows to farrow Dec. 1—May 30.....	.68	34
Hogs under six months—June 1.....	.58	16
Hogs available for marketing June 1 ¹	.72	13

¹Total hogs on farms less sows to farrow.

The analysis showed that in this period, the best indicator of commercial hog marketings in Canada during the first six months of the year has been the number of sows-to-farrow from June 1 to November 30 the previous year. During the last six months of the year, the numbers of hogs available for market at the immediately previous June 1 was a better indicator than the sows-to-farrow figure.

The coefficient of determination was the statistical measure used to assess the strength of relationship between marketings and the various factors mentioned. (Table 1). For example, 81 per cent of the variation in marketings during the first halves of the years 1942 to 1954 is explained by the sows-to-farrow estimates during the periods June 1 to November 30 of the years 1941 to 1953. The other statistical measure used (Table 1), the standard error of estimate, indicates the degree of accuracy which might be expected of forecasts of commercial hog marketings based on these relationships. In other words,

¹ This figure represents about 70 per cent of the hogs marketed. It does not include hogs sold to local butchers or killed for farm use.

Table 2.—Coefficients of Determination and Standard Errors of Estimate; Commercial Hog Marketings Jan. 1 to June 30, as Affected by (1) Sows to Farrow and (2) Hogs under Six Months of Age on Farms

Province	Coefficient of determination		Standard Errors of Estimate as Per Cent of Mean of Marketings	
	Sows to farrow June 1— Nov. 30	Hogs under six months at Dec. 1	Sows to farrow June 1— Nov. 30	Hogs under 6 months at Dec. 1
Quebec.....	.89	.30	14	36
Ontario.....	.03	.03	11	10
Total East.....	.43	.30	14	16
Manitoba.....	.94	.97	12	9
Saskatchewan.....	.99	.96	10	54
Alberta.....	.93	.93	12	11
Total West.....	.87	.92	15	16
Canada.....	.91	.79	8	12

if the relationship between marketings from January 1 to June 30, and the sows-to-farrow estimate made a year earlier remains the same in the future, it is possible, two-thirds of the time, to predict the number of hogs which will be marketed during the first six months of the year within plus or minus 13 per cent of the long time average.

The relations between (1) commercial marketings and sows-to-farrow and (2) commercial marketings and hogs under six months was tested for each of the major producing provinces. This was done on the basis of absolute numbers rather than percentage change from the preceding year which was used for the analysis reported in Table 1. The sows-to-farrow data yielded a closer relationship to marketings during the first half of the year than the hogs under six months data in Quebec and Saskatchewan (Table 2). In other provinces the two factors tested appeared to be of almost equal forecasting value. For the latter half of the year sows-to-farrow data tends to yield the closer relationship for Ontario and Manitoba, but the hogs under six months data resulted in greater accuracy for Quebec, Saskatchewan and Alberta. (Table 3). For total marketings in Eastern Canada the closer relationship is to sows-to-farrow in both periods but in Western Canada the reverse is true.

Table 3.—Coefficients of Determination and Standard Errors of Estimate; Commercial Hog Marketings July 1 to Dec. 31 as Affected by (1) Sows to Farrow and (2) Hogs Under Six Months of Age on Farms

Province	Coefficients of Determination		Standard Errors of Estimate as Per Cent of Mean of Marketing	
	December 1— May 31	Hogs under 6 months at June 1	Sows to farrow Dec. 1— May 31	Hogs under 6 months at June 1
Quebec.....	.28	.77	33	15
Ontario.....	.77	.05	7	14
Total East.....	.73	.30	11	18
Manitoba.....	.98	.88	8	15
Saskatchewan.....	.74	.94	37	18
Alberta.....	.87	.96	16	9
Total West.....	.89	.95	16	11
Canada.....	.59	.59	21	21

Economic Factors

In addition to the statistical indicators analysed, forecasts of hog marketings may be based on those economic factors which influence farmers' decisions to produce hogs. Such economic data may well become available earlier than those giving preliminary indications of production and would thus supply the basis for earlier forecasts. Prices of hogs, prices of other livestock, farm cash income and feed supplies are among the principal economic factors believed to influence hog production.

Prices of Hogs.—The number of hogs marketed each year depends on both economic and physical factors. These factors influence a farmer's decisions at various times before the actual marketing takes place.

The individual operator does not know at the time of breeding, for example, what the price of hogs is going to be at the time of marketing; and his estimate of the price at that future date will therefore influence his decision on breeding. D. Gale Johnson¹ says that there are at most a half-dozen ways for a farmer to estimate future prices; 1) projection of the current price into the future; 2) projection of a trend of prices over some past period; 3) assuming that prices will be normal in that the future price will be the same as some previous average; 4) assuming that future prices will be more nearly "normal" than present prices but that there will still be a fairly high correlation with present prices; 5) selection of some time or period of time in the past disregarding immediately prior or past periods; and 6) forecasting on the basis of statistical techniques.

The bacon agreement with the United Kingdom and support prices, insofar as they have acted as guaranteed minima, have tended to simplify the farmer's problem in estimating future prices.

Hog-Feed Ratio.—Another factor is the relationship between the price of hogs and the price of feed grains. If the price of feed at breeding time is high relative to the price of hogs, the farmer may tend to cut down on the number of sows which he breeds. The relationship of prices of hogs to prices of feed is commonly known as the hog-feed, hog-barley or the hog-corn ratio. It is assumed that if a greater cash return can be realized from 100 pounds of pork than from the sale of enough feed to produce that pork, it is to the advantage of the farmer to raise hogs (all other things being equal).

Prices of Other Livestock.—Decisions that farmers make regarding hog production may be affected by the expected returns from alternative enterprises. The same procedures for anticipating price, as already mentioned, are used in assessing the profitability of these alternative enterprises. In other words, if a farmer has the choice between raising hogs and raising poultry, the choice is made on the basis of expected returns a year or more in the future.

Farm Income.—The costs of production are made up of variable costs, such as feed, seed, and wages; and fixed costs such as taxes, interest, depreciation. These costs have to be borne by the various enterprises on the farm.

It is likely that, having covered these costs, a farmer begins to place a value on his leisure time. F. M. Schrader² had this to say:

A high percentage of the costs of production are made up of fixed charges for land, labor, and capital. When farm incomes are low, there is a tendency for farmers to work harder for longer hours in an effort to cover these fixed costs. However, when farm incomes are sufficiently high to cover fixed and variable costs, and when many of the necessities of life can be provided from ordinary farm income, a greater incentive may be required to induce them to work longer and harder.

¹D. Gale Johnson, *Forward Prices for Agriculture*. The University of Chicago Press. Chicago, Illinois. 1947. p. 74.

²F. M. Schrader, *Factors Affecting Hog Production*, Canada Department of Agriculture, Marketing Service, Economics Division, March 1953. p. 6.

Feed Supplies.—Since much of the hog ration consists of coarse grains, the available supply of these staples should affect farmers' decisions as to the number of sows to be bred. In years of high feed production, there may be a tendency to breed more sows with a resultant increase in marketings the following years. By the same token, in years of low feed production, there should be a tendency to decrease hog production. Since 1941 a combination of high grain production and marketing quotas has often deprived prairie farmers of an immediate market for what would normally be all of their saleable surplus. This has put pressure on them to market a larger portion of their grain through livestock.

Analysis and Findings.—An attempt was made to isolate, by mathematical means, the most important factors affecting the number of hogs marketed each winter in Western Canada. The following factors were believed to have influenced the plans farmers made a year earlier.

- (1) stocks of barley on farms;
- (2) the ratio of farm cash income to prices of commodities and services used by farmers;
- (3) the hog-barley ratio;
- (4) The passage of time, which is associated with other factors such as changes in demand.

These factors were found to explain about 94 per cent of the variation in commercial marketings with a standard error of approximately 10 per cent of average marketings. That is to say, estimates made of future marketing over a long period of time, from the mathematical formula, will be within 10 per cent of the actual marketings two times out of three, provided the relationship between the marketings and the factors analyzed remains the same.

The factor which has had the greatest effect on hog marketings is apparently the amount of barley on farms at the time of breeding. Farm cash income has also influenced breeding decisions but to a lesser degree than barley stocks. The hog-barley ratio, however, had no apparent effect. Factors related to and represented by "time" were found to be more closely related to marketings than any of the other factors used except barley stocks.

The ineffectiveness of the hog-barley ratio, commonly believed to be a major influence, requires some explanation. It has already been mentioned that, throughout the period analyzed, there were quotas on deliveries of grains to elevators. As a result, the value that farmers placed on barley that could not be delivered most probably was lower than the market price. This not only explains why the hog-barley ratio had no apparent effect on hog production but also provides the answer to why stocks of barley had such a powerful effect.

Two sets of data were analyzed to try to determine the factors affecting commercial hog marketings in eastern Canada during the winter. In the first analysis the factors selected as being most likely to influence farmers' breeding plans a year earlier were:

1. the hog-feed ratio;
2. the ratio of farm cash income to the prices of commodities and services used by farmers, and
3. the passage of time which is associated with other factors such as changes in demand.

This first attempt being inconclusive, a second analysis was carried out using a different set of factors. This time, the marketing period taken was July to December inclusive and the factors assumed to have influenced farmers' decisions a year before were as follows:

1. total production of feed grains in eastern Canada in the harvest before breeding,

2. the ratio of the average hog price during October-December to whole-sale prices of field crops in the same year,
3. the passage of time which is associated with other factors such as changes in demand.

The results of the second attempt, like those of the first, were inconclusive. In neither case was the relationship strong enough to be reliable for forecasting commercial hog marketings.

Conclusions.—This study has yielded a number of relationships which may be used for forecasting hog marketings up to twelve months in advance. For the first six months of the forecast period, data are available for making forecasts on the basis of a variety of preliminary indications of production. The one yielding the lowest standard error of estimate should be selected. However, sows-to-farrow are the only production data available for forecasts of commercial marketings further in advance than six months.

It seems reasonable to expect that the numbers of hogs under six months of age on farms would be more closely related to subsequent marketings than the numbers of sows to farrow which are estimated six months earlier. Since the calculation indicate that the reverse is true, further study of ways of improving these basic data seems desirable.

When considering what economic factors affect changes in hog marketings the underlying assumption is that the farmer is an "economic man" by classical definition, that is, he is motivated by the desire to maximize his monetary returns. Unless this assumption is essentially true, it is impossible to find a very close relationship between marketings and the various economic factors which are assumed to affect them. In addition, the complexity of the farming economy will determine the number of economic factors that could affect the volume of hog marketings. From the results obtained, economic factors appeared to offer a satisfactory basis for forecasts in Western but not Eastern Canada. This, of course, does not mean that farmers in the East are less rational than in the West, but rather that the number of factors affecting marketings is greater in the East and that all factors have not been isolated. It could also mean that the data used are better for Western than for Eastern Canada.

The results obtained in this study do not provide a very reliable basis for forecasting future marketings of hogs. The smallest standard error of estimate was that for marketings in Ontario during the last half of the year when estimated from sows-to-farrow during the first half of the year. In this case the best that can be said is that, two times out of three, the actual marketings will probably be within plus or minus seven per cent of the estimate made. At the other extreme, the standard error of estimate was as high as 54 per cent of average marketings.

Although mathematical formulas are used in forecasting hog marketings, it does not imply that the forecasting procedure has become purely mechanical. It goes without saying that the estimates arrived at by formulas must be reconsidered in the light of new facts, economic or otherwise, which may affect marketings.

Further study is needed to improve the accuracy of both the basic data and the methods described in this report. An effort should be made to isolate all of the major factors affecting hog marketings in Canada and particularly in the eastern provinces.

Corrigendum: In the article *Let there be bread* in the August, 1955 issue, page 94, line 3, the word "developed" should read "underdeveloped".

SUNFLOWER PRODUCTION ON MANITOBA FARMS

G. B. McNEILL

In Manitoba sunflowers were first grown in farm gardens. Most of the seed was used for human consumption and some was sold to specialty markets; some use was also made of the whole plant itself as silage and fodder for livestock. During the last world war a reduction in imported supplies of fats and oils resulted in a marked increase in the production of sunflower seed for use as an edible oil. Seed was distributed under government sponsorship in all the prairie provinces in 1943. The acreage in sunflowers then totalled about 18,600 and most of it was in Saskatchewan. By 1945, however, production was concentrated in 20 to 30 townships of the Red River Valley area, south of Winnipeg, in Manitoba. From 8,500 acres in that year the Manitoba sunflower seed acreage rose to 60,000 acres in 1949 (Table 1), production being then scattered over a much wider area of the province. There was a considerable reduction in acreage in subsequent years and production again became concentrated in the Red River Valley area. Since 1946 Manitoba has been the only Canadian province to produce sunflower seed.

Table 1.—Acreage, Total Production, Yield and Average Price,
Sunflower Seed, Manitoba, 1945-1954.

Year	Acre	Total Production	Yield per Acre	Price per Pound
		—pounds—	—pounds—	—cents—
1945.....	8,500	2,550,000	300	5.00
1946.....	23,000	13,000,000	565	5.10
1947.....	23,000	16,000,000	700	7.44
1948.....	29,000	23,200,000	800	7.29
1949.....	60,000	26,100,000	435	4.03
1950.....	26,000	9,880,000	380	4.23
1951.....	21,500	7,000,000	325	4.25
1952.....	3,000	1,896,000	632	5.00
1953.....	4,500	3,960,000	880	4.50
1954.....	20,000	14,000,000	700	4.50

Source: *Report on Crops, Livestock, etc.*, Issued annually by the Manitoba Department of Agriculture and Immigration.

Commercial production of sunflowers represents only a small part of the total crop production of Manitoba. Nevertheless, it is of economic significance in the area where its production is concentrated. This area is known as the Carman-Morden, Altona triangle and it consists, for the most part, of small farms with highly arable soils. Among the local customs and traditions is a strong attachment to the land. As a result, there is a strong demand for land and farms are smaller and more intensively operated than farms in other areas of the province. The area also enjoys a longer growing season and a higher average summer temperature than the more northerly parts of the province. Because of these favorable conditions the main crops include sunflowers, corn, sugar beets and canning crops, all crops that require more intensive production practices but usually yield higher returns per acre than the cereal crops.

A comparative analysis of gross returns per acre from sunflowers and from wheat, oats, barley and flax over the 1945-54 period illustrates one of the main reasons for the increased production of sunflowers from 1945 to 1950 and for its decline in ensuing years (Table 2). Average gross returns per acre, for the ten-year period, were about the same for wheat, flax and sunflowers, 22 per cent lower for oats and 29 per cent lower for barley. Fairly good yields and high prices resulted in well above-average returns from sunflowers in 1947 and 1948. Severe storms just prior to harvesting in 1949, insect

Table 2.—Gross Returns per Acre for Wheat, Oats, Barley, Flax and Sunflowers, Altona, Manitoba, 1945-1954.

Year	Wheat	Oats	Barley	Flax	Sunflowers
		— dollars —			
1945.....	30.06	13.77	14.28	23.46	15.00
1946.....	35.07	18.48	18.72	30.00	23.82
1947.....	23.24	21.84	15.54	47.68	52.08
1948.....	41.50	24.70	25.48	37.05	58.32
1949.....	27.20	22.33	26.60	23.90	17.53
1950.....	29.16	30.96	36.48	34.74	16.07
1951.....	38.64	24.85	29.38	32.12	13.81
1952.....	32.60	24.80	36.63	31.90	31.60
1953.....	33.36	23.31	22.08	23.25	39.60
1954.....	21.96 ^a	13.44 ^a	15.48 ^a	26.80	31.50
Average, 1945 to 1954.....	31.28	21.85	24.07	31.09	30.43

^aBased on initial payments only.

damage in 1950 and severe rust damage in 1951 contributed to a marked decrease in yields and total production. Because of these insect and disease hazards the acreage in sunflowers dropped sharply in 1952 and 1953. However, yields were higher in 1952 than in five of the seven preceding years and higher in 1953 than in any of the preceding years, and acreage increased markedly in 1954.

To obtain more detailed information on farmers' experience in sunflower production, business records were secured in 1951 for 39 farms growing sunflowers in 1950. The farms studied had between ten and 100 acres in sunflowers. Business records for the years 1949, 1950 and 1951 indicate that, on the average, these farms had nearly 35 acres in sunflowers. Slightly over 50 per cent of the farms had between 20 and 50 acres, about six per cent had less than ten acres and another six per cent had more than 80 acres.

Farm Organization.—The average acreage per farm in 1950 was 266 acres (Table 3), for the 39 farms studied, and ranged from 108 to 607 acres. The acreage in sunflowers averaged 31 acres per farm in the sample compared with 34 acres for all farms in the area. Average acreage per farm of other crops,

Table 3.—Utilization Average of Cropland per Farm, 39 Farms Growing Sunflowers, Manitoba, 1950.

	Acres	Per Cent of Cropland
Sunflowers.....	31	12.9
Wheat.....	56	23.3
Oats and Barley.....	74	30.8
Flax.....	8	3.3
Other grains.....	1	.4
Corn.....	18	7.5
Sugar beets.....	9	3.8
Legumes, grasses.....	3	1.3
Improved pasture.....	9	3.8
Canning crops and potatoes.....	2	.8
Summerfallow.....	29	12.1
Total cropland.....	240	100.0
Total area.....	266	
Per cent of farm area in cropland.....		90.3
Number of farms.....		39

were: wheat, 56; oats and barley, 74; and corn, 18. Of the 240 acres in cropland 199 acres were in crops other than legumes and improved pasture and only 29 were in summerfallow; these figures illustrate the emphasis on crop production and the diversification of the crop program.

On most of the farms the livestock enterprises were of minor importance, and served mainly to provide livestock products for home consumption. Eighty-three per cent had one or more horses, 84 per cent had an average of about eight head of cattle per farm and close to 75 per cent had an average of two sows per farm.

Three farmers rented all their land, 20 were part-owners and the others owned all the land they operated. Investment in real estate, livestock and machinery averaged \$21,000 per farm or \$79 per acre. On the average a farmer used about 20 months of labor, the operator supplying 12 months, hired labor about three-quarters of a month and unpaid family labor the remainder.

The Sunflower Enterprise.—Nearly 80 per cent of the 39 farms had produced sunflowers every year since 1946. More than half the farmers interviewed stated that sunflowers had some special value in a cropping system in addition to their value as a cash crop. Fifteen of them said that sunflowers helped control weeds and reduce the need for summerfallowing; seven considered that sunflowers helped control erosion and soil drifting; and others stated that the crops following sunflowers yielded better and that sunflowers helped loosen up heavy soils, were a good row crop, and added diversity to the cropping pattern. On the other hand, about 15 per cent of the farmers said that sunflowers were hard on the land and that the high costs of combining and the time spent on hand hoeing reduced their value as a cash crop.

The growing of sunflowers meant a reorganization of the cropping programs even though only about half of the farms followed a regular rotation and only about half of the same farms gave sunflowers a definite place in the rotation. The operators of the smaller farms adhered more strictly to their rotation systems, which were generally longer and included more row crops and less black summerfallow. About 12 per cent of the farms grew sunflowers to reduce or take the place of the acreage in corn and ten per cent to reduce the wheat acreage.

Labor Returns from Sunflowers.—Yields since 1945 have varied considerably, because of the wide variations in growing conditions. They have also varied from farm to farm as a result of differences in cultural methods and practices. Yields, along with prices, are the two main factors determining the size of returns from sunflowers. Data on receipts and expenses were obtained for the 39 farms, and used to calculate returns for 1950 (Table 4). The largest cost item was for the use of power and machinery. Sunflowers require after-seeding cultivations which raise the cost of field work above that entailed for cereal grains. About one-quarter of the farmers interviewed considered that repair costs were higher when combines were used to harvest sunflowers than when used to harvest other crops; they attributed one-quarter of their costs to the harvesting of sunflowers even though the acreage in this crop was less than one-quarter of the total acreage on which the combines were used. Land had an average value of \$52 per acre and interest on it was the second largest cost item. Seed costs per acre were slightly lower than seed costs for cereal grains.

Tillage and Cultural Practices.—Many different tillage machines are used in the production of sunflowers. The types of machines used and the amount of work done with machines of "typical size" are described in Table 5. The number of acres shown as worked by the different machines are based on estimates made by the farmers interviewed.

Some field work is usually done in the fall, the amount done depending on weather conditions. In 1950 most of the plowing and one-way disking were done during the fall season.

Table 4.—Receipts, Expenses and Labor Returns per Farm and per Acre, 39 Sunflower Enterprises Manitoba, 1950-51.

	per Farm	Per Acre
	— dollars —	
Receipts.....	758	24.45
Expenses		
Seed.....	45	1.45
Fertilizer.....	19	.61
Interest on land at five per cent.....	81	2.61
Taxes.....	43	1.50
Machinery use.....	219	7.07
Total costs excluding labor.....	407	13.14
Labor returns from sunflowers.....	351	11.31

Various sequences are followed in the use of machines for the preparation of the seed bed. A tabular description of these sequences and of the time required for each one is made in Table 6. The number of hours per acre are based on the rates of work done by machines of typical sizes, as shown in Table 5. On the 39 farms visited the number of operations ranged from two to ten, but four were performed on most of the farms. The cultivator and the plow were major tillage machines but the drag harrow was the most frequently used type of machine.

The most common methods of seeding sunflowers were to use a grain drill, stopping up some of the feed cups, or to use a corn planter. About two-thirds of the farms used a 36-inch spacing in rows and the others a 40 to 42-inch row spacing. Seventeen of the 39 farms seeded in an east and west direction and 15 seeded in a north and south direction (the other seven farms did not provide information on this cultural practice). Seeding rates were

Table 5.—Practices Used and Rates of Work Done, 39 Sunflower Enterprises, Manitoba, 1950.

Operation and Machine	Growers Using this machine		Times Over	Typical Size of Machine	Work per Hour with Typical Machine
	Number	Percent		Feet	Acres
Pre-seeding—					
Cultivator.....	19	49	2	8.0	3.0
Plow.....	22	56	1	3.5	1.6
Disc harrow.....	7	18	1	15.0	5.8
Oneway disc.....	7	18	1	6.0	2.3
Discer.....	1	3	1	12.0	6.0
Spring tooth harrow.....	3	8	2	12.0	5.2
Packer.....	4	10	1	10.0	5.0
Harrow.....	34	87	2	24.0	10.0
Seeding—					
Grain drill.....	19	49	1	24 run	3.9
Corn planter.....	15	38	1	2 row	2.5
Beet planter.....	5	13	1	4 row	4.8
After seeding					
Harrow.....	36	92	2	24.0	9.3
Cultivator.....	38	97	3	2 row	2.3
Harvesting					
Combine.....	39	100	1	12 (S.P.)	3.4

close to recommended rates, ranging from three to six pounds per acre. The depth of seeding most commonly reported was between two and three inches. Seeding dates vary considerably from farm to farm and from year to year. In 1950 most of the crop was seeded between June 1 and June 10 whereas in 1951 most of the crop had been between May 10 and May 30. When weather conditions are favorable, the usual seeding date is between May 10 and May 20. About three-fourths of the farmers seeded sunflowers after seeding their wheat and most of the remainder after they had seeded all other grains. On a little over half of the farms visited fertilizer was used on sunflowers, at a rate of 35-45 pounds per acre.

Tillage after seeding is a recommended practice. It usually consists of harrowing across the direction of planting just prior to plant emergence and again after the seedling has reached the three to four-leaf stage. Row cultivation is generally done three to four times. The number of times over depends on weed growth, rate of growth of the sunflowers and the clearance of the cultivating machinery. Generally cultivation stops when the plant is between 2 and 2.5 feet high. Hand hoeing is not a common practice.

All farms used a combine to harvest their sunflowers and about half of them hired the work done even though they owned a combine. An ordinary combine can be used by adding simple and fairly low cost attachments to the

**Table 6.—Sequences Used in Preparing the Seedbed for Sunflowers,
39 Sunflower Enterprises, Manitoba, 1950.**

Sequences and Number of Operations	Per Cent of Growers Using this Sequence	Total Operations per Sequence	Hours per Acre for this Sequence
Plow 1, cultivator 1, harrow 3.....	25.6	5	1.25
Cultivator 2, harrow 2.....	17.9	4	.86
Oneway 1, harrow 2.....	10.3	3	.63
Plow 1, harrow 1, packer 1.....	7.7	3	.92
Plow 1, harrow 1.....	7.7	2	.72
Cultivator 1, disc harrow 1, harrow 2.....	7.7	2	.70
Others ^a , using plow, harrow, disc harrow, cultivator, spring tooth harrow or packer.....	15.4	4	1.16
Others ^a , using oneway disc, packer, harrow or cultivator...	7.7	4	1.06

^aThe machines indicated were used in various combinations but all the machines were not necessarily used by all the operators.

combine. The attachments are a solid reel, that is, one with the space between the reel slats filled in and pans protruding in front of the cutting bar. The pans fill the space between the rows and straighten up the stalks, making cutting easier. Sunflowers have a pithy stem and flower receptacle. A drying-out period is necessary and that delays harvest until most other grain crops have been harvested. This is an advantage when a prolonged harvest season makes for less rush and possibly more efficient use of labor. Just over half of the combines were operated by one-man crews; about a third of them used two men and the remainder used three men. The 12-foot self-propelled combine was the most common machine.

Although many methods and machines are used for tillage, seeding, and harvesting, no clear-cut superiority of one method or practice over another can be shown. The type of machine a farmer will use is often dictated by the kinds of machines he already owns or can readily rent even though he may feel that another type of machine would do a more satisfactory job. About all that can be said as to the superiority of one practice over another from the data on tillage practices is to suggest that individual farmers should compare the time required for different tillage sequences with their own practices.

Data presented in Table 7 indicate the time required to produce an acre of sunflowers; these data are based on the average time taken on the 39 sunflower farms, using all practices and sequences. They relate only to the field work and do not include the time required for such tasks as servicing of machinery and tractor in the field or before going to the field, filling seed boxes on drills and planters, handling fertilizer, and handling the seed at harvest.

Yields and Cultural Practices.—It is difficult to determine just what effect certain tillage and cultural practices may have on yields. Agronomists' recommendations in 1950 were that the first generation of Advance hybrid seed was the most suitable seed variety available. Nearly 70 per cent of the growers visited used this variety in 1950 and harvested an average of 514 pounds per acre. The other growers used second generation Advance hybrid and other less suitable varieties and obtained only 381 pounds per acre.

Mainly because of the lateness of the seeding and harvesting seasons, yields in 1950 were well below the average for the four preceding years. The average yield for the 39 farms studied was 489 pounds per acre and ranged from 130 to 800 pounds per acre. Much of the seed was harvested in a "tough" condition.

**Table 7.—Labor and Tractor Requirements for Sunflower Production,
39 Sunflower Enterprises, Manitoba, 1950**

Opération	Labor	Tractor
	— hours per acre —	
Seedbed preparation.....	1.08	.96
Seeding.....	.38	.29
After seeding cultivation.....	1.89	1.64
Harvesting.....	.59	.39
Total.....	3.94	3.28

Fertilizer is also recommended and those who used it harvested 523 pounds of seed per acre compared with 385 pounds per acre for those who did not use it. The effectiveness of other practices also seemed to be apparent in the yields. Growers who used a row cultivator on the growing crop three or more times had an average yield of 489 pounds per acre and those who cultivated less than three times had an average of 322 pounds per acre. Treatment of seed with mercuric dust is recommended and those who followed this practice obtained 507 pounds per acre compared with 445 pounds per acre for the farmers who did not treat their sunflower seed. There was a slight tendency for a higher proportion of growers on the larger farms to use the recommended practices than those on the smaller farms. However, caution should be used in interpreting the effectiveness of these practices in increasing yields. The size of the sample was not sufficiently large to hold the effect of any one practice constant while the effect of another was being measured. Consequently, the interaction and cumulative effect of using more than one practice is shown in the yields quoted in the above paragraph. But the data are given only to demonstrate that there is a tendency for yields to be higher where recommended practices are used. Table 8 shows the effect on yields of an increasing number of good practices.

Outlook.—Since the field study was made in 1951, the acreage in sunflowers has declined sharply. The varieties in use at that time were very susceptible

Table 8.—Relation of Yields to Use of Recommended Cultural and Tillage Practices Used, 39 Sunflower Enterprises, Manitoba, 1950.

Number of recommended practices ¹ used	Number Using the practices	Yield per Acre (Lb.)
0.....	4	262
1.....	7	358
2.....	11	501
3 and more.....	17	520
All growers.....	39	

¹The recommended practices used were:

- (a) Use of the first generation Advance hybrid seed.
- (b) Three or more times over with a row cultivator after seeding.
- (c) Use of fertilizer.
- (d) Treatment of seed with mercuric dust.

to rust and the 1951 crop was badly damaged. Research in breeding rust-resistant varieties has been underway for some time and some progress has been made. In 1954 a rust-resistant variety, Beacon, was grown under farm conditions. Enough seed of the Beacon variety was produced to seed about 17,000 acres. But unfavorable climatic and soil conditions during seeding season may have resulted in a lower sunflower acreage in 1955 than in 1954.

There appears to be a market outlet for sunflower oil for human consumption and also for the by-products of the oil extraction process. But as long as there is a greater risk of crop losses from diseases and insect damage with sunflowers than with other crops, it is unlikely that farmers will grow more sunflowers. Whether or not sunflowers can become a stable crop will depend on whether varieties can be developed that have rust resistance and other desirable features.

OTHER PUBLICATIONS

Canned Food. Her Majesty's Stationery Office. London, 1955. pp. v plus 98.

A review of world production, consumption and trade for the years 1948 to 1953, with comparable figures for 1938. This publication brings together, for the first time since the war, the available material relating to canned meat, fish, milk, fruit, fruit juices, vegetables and other canned foods.

Fruit. Her Majesty's Stationery Office. London, 1954. pp. iv plus 164.

A statistical review of the annual production of and trade in fresh, canned and dried fruits, fruit juices and wine, in all important countries in post-war years, with comparative data for 1938. Appendices provide information about Government measures affecting the import of fruit into the United Kingdom, import duties and trade regulations in Western European countries, and the supplies, utilization and domestic consumption of fruit in the United Kingdom, Australia, Canada and the United States.

Vegetable Oils and Oilseeds. Her Majesty's Stationery Office, London, 1954. pp. xvi plus 176.

A review of production, trade, utilization and prices relating to the ground-nuts, linseed, cottonseed, sunflower seed, soya beans, coconut and oil palm products, olive oil, and other oil seeds and oils, including whale oil. The review also provides for certain countries' estimates of the total available supplies of vegetable oils, with data regarding the output of soap, margarine and compound cooking fat and the quantities of the different oils and fat utilized in their production.

THE ECONOMIC ANNALIST

A BIMONTHLY REVIEW OF AGRICULTURAL BUSINESS

MARKETING SERVICE, ECONOMICS DIVISION

J. F. BOOTH, Chief

DECEMBER 1955

Vol. XXV, No. 6

CONTENTS

	Page
The Economic Situation.....	123
The Financial Structure of Canadian Local or District Marketing Co-operatives..... <i>H. K. Ingersoll</i>	126
Cost of Producing Crops in the Eastern Townships of Quebec... <i>L. R. Fortier and A. Gosselin</i>	131
Functions of the United Kingdom Marketing Boards..... <i>Roger Perreault</i>	137
United Nations Publications.....	143
Other publications.....	143

EDITORIAL COMMITTEE:

G. P. Boucher, L. E. Drayton and Frank Shefrin

Published by Authority of the Right Honourable James G. Gardiner
Minister of Agriculture

ANNUAL AND MONTHLY INDEX NUMBERS
WHOLESALE PRICES, FARM PRICES AND LIVING COST INDEXES

Year	Wholesale Prices 1935-1939=100				Farm Prices of Agricultural Products 1935-39 =100 (e)	Commodities and Services used by Farmers 1935-39=100		Consumer Price Index (1949 =100) (h)	Food Index (1949=100) (i)	Index of industrial production (1935-39 =100) (j)
	(a) General Wholesale Index	(b) Farm Products	(c) Field Products	(d) Animal Products		(f) Equipment and Materials	(g) Composite Index			
1913.....	83.4					85.4		49.2	44.4	
1914.....	85.4					90.2	85.3	49.6	46.0	
1915.....	91.8					96.9	91.6	50.3	46.8	
1916.....	109.8					101.7	100.5	54.2	51.8	
1917.....	148.9					140.7	140.5	63.7	66.9	
1918.....	166.0					164.1	160.2	72.0	76.9	
1919.....	174.7					169.1	167.9	78.8	82.2	
1920.....	203.2					190.1	186.5	90.5	94.4	
1921.....	143.4					147.4	152.5	80.9	72.5	
1922.....	126.8					124.6	134.1	74.9	61.5	
1923.....	127.7					118.3	130.6	75.2	61.9	
1924.....	129.5					122.3	131.9	74.0	60.7	
1925.....	133.8					123.2	131.8	74.6	63.4	
1926.....	130.3	144.4	158.5	130.2		119.9	130.6	75.9	66.6	
1927.....	127.3	138.6	149.4	127.8		119.9	131.2	74.6	65.3	
1928.....	125.6	136.3	134.3	138.2		118.3	129.3	75.0	65.6	
1929.....	124.6	140.8	137.2	144.4		117.6	127.9	75.8	67.1	
1930.....	112.9	119.5	105.8	133.3		105.6	117.0	75.3	65.6	
1931.....	94.0	78.9	65.0	92.7		92.2	100.9	67.9	51.4	
1932.....	86.9	65.5	60.4	70.5		89.3	93.3	61.7	42.8	
1933.....	87.4	69.3	69.3	69.2		88.8	89.8	58.8	42.3	
1934.....	93.4	83.5	80.5	86.5		96.8	95.5	59.6	46.2	
1935.....	94.4	89.2	84.4	94.1	88.0	95.6	95.4	59.9	47.2	85.6
1936.....	96.8	97.9	102.2	93.7	96.9	98.7	98.1	61.1	48.8	94.6
1937.....	107.7	117.4	128.9	106.0	119.7	108.4	105.3	63.0	51.4	108.0
1938.....	102.0	102.9	100.9	104.8	105.0	101.2	101.7	63.7	51.7	102.0
1939.....	99.2	92.6	83.7	101.5	91.8	95.7	99.3	63.2	50.2	109.7
1940.....	108.0	96.1	85.4	106.7	96.8	101.8	106.8	65.7	52.6	131.4
1941.....	116.4	106.6	88.9	124.4	110.2	107.8	116.1	69.6	57.9	164.8
1942.....	123.0	127.1	109.7	144.6	133.1	119.2	131.6	72.9	63.4	195.7
1943.....	127.9	145.4	129.0	161.8	157.8	122.4	143.4	74.2	65.2	208.5
1944.....	130.6	155.3	144.5	166.1	172.4	126.0	148.0	74.6	65.5	212.4
1945.....	132.1	166.4	162.5	170.2	185.7	125.9	152.1	75.0	66.3	187.2
1946.....	138.9	179.5	177.9	181.2	204.1	128.0	157.0	77.5	70.0	171.9
1947.....	163.3	192.2	184.1	200.2	215.8	139.5	170.4	84.8	79.5	187.8
1948.....	193.4	232.1	200.6	263.7	255.8	173.1	197.6	97.0	97.5	196.3
1949.....	198.3	228.7	191.9	265.4	255.4	180.3	204.1	100.0	100.0	199.6
1950.....	211.2	236.7	191.9	281.4	260.8	189.9	210.4	102.9	102.6	211.5
1951.....	240.2	268.6	200.4	336.9	296.8	206.0	230.0	113.7	117.0	226.5
1952.....	226.0	247.2	216.9	277.5	274.4	215.8	243.1	116.5	116.8	232.9
1953.....	220.7	221.6	179.4	263.8	250.4	207.4	239.8	115.5	112.6	248.4
1954.....	217.0	210.4	164.6	256.2	233.4	203.3	235.9	116.2	112.2	244.6
1954										
July.....	217.4	219.6	177.0	262.1	241.1			116.2	112.1	238.5
August.....	215.8	208.4	168.7	248.2	231.2	201.9	238.7	117.0	114.4	246.7
Sept.....	215.3	204.6	163.8	245.5	227.4			116.8	113.8	253.7
Oct.....	214.3	201.7	162.9	240.5	220.0			116.8	113.8	256.0
Nov.....	214.9	204.2	165.2	243.1	219.3			116.8	113.4	254.4
Dec.....	215.4	205.3	164.6	245.9	219.7			116.6	112.6	240.6
1955										
Jan.....	215.7	207.0	165.6	248.4	220.9	205.8	231.8	116.4	112.1	238.2
Feb.....	217.4	206.7	167.6	245.8	222.3			116.3	111.5	248.0
Mar.....	217.4	203.7	166.1	241.3	221.6			116.0	110.7	251.9
Apr.....	218.5	212.7	186.8	238.7	228.8	204.7	240.3	116.1	111.0	259.2
May.....	217.8	213.3	183.2	243.4	229.2			116.4	112.3	267.4
June.....	218.7	212.2	174.3	250.0	229.3			115.9	111.0	276.8
July.....	218.4	209.8	170.0	249.5	229.2			116.0	111.5	263.9
August.....	219.6	204.8	159.0	250.6	225.9	203.3	241.3	116.4	112.4	269.8
Sept.....	220.9	202.7	153.9	251.6	226.5			116.8	113.7	
Oct.....										

(a) Canada. Dominion Bureau of Statistics, Labour and Prices Division. *Prices and Price Indexes*. Ottawa, Monthly.

(b) Ibid. (a). Wholesale prices of products of Canadian farms.

(c) Ibid. (a). Wholesale prices of grains, hay, tobacco and potatoes.

(d) Ibid. (a). Wholesale prices of animals and animal products.

(e) Canada. D.B.S., Agriculture Division. *Index Numbers of Farm Prices of Agricultural Products*. Ottawa, Monthly.

(f) Canada. Dominion Bureau of Statistics, Labour and Prices Division. *Price Index Numbers of Commodities and Services Used by Farmers*. Ottawa, Jan., Apr. and Aug. Includes prices of commodities in 8 groups including farm implements, building materials, gasoline, oil and greases, feed, fertilizer, binder twine, seed and hardware.

(g) Ibid. (f). Includes the 8 commodities indicated above plus tax rates, interest rates and farm wage rates.

(h) & (i) Canada. Dominion Bureau of Statistics, Labour and Prices Division. *Prices and Price Indexes*. Ottawa, Monthly.

(j) Canada. Dominion Bureau of Statistics. *Canadian Statistical Review*. Ottawa, Monthly.

THE ECONOMIC SITUATION—1955

Year-End Review¹.—Since the upturn in economic conditions in the last half of 1954, the Canadian economy has experienced a steady expansion. By the second quarter of 1955, Gross National Product was running at an unprecedented annual rate of \$26·2 billion, a gain of four per cent over the first quarter of this year and nine per cent above the annual average of \$24·0 billion in 1954. Prices have shown little movement in a year-to-year comparison, so that most of this change represents an increase in the physical volume of output.

A strengthened demand in all sectors is responsible for this buoyant situation. Exports have been running well above the level of the previous year and investment expenditures are expected to reach a record level, surpassing the previous 1953 peak. Government expenditures on goods and services have shown moderate increases this year. At the same time consumer expenditure, supported by a higher level of personal income, has been one of the major sources of strength in 1955. This firmer market situation has helped to restore business confidence and this in turn has given added strength to the economic picture.

Foreign Trade.—The value of commodity exports rose 11·6 per cent during the first nine months of this year compared with the same period in 1954. The respective nine-month totals were \$3,197 million in 1955 and \$2,864 million in 1954. It was the highest peacetime volume of exports on record. This increase has been closely associated with improved conditions in the United States as indicated by the rise in exports of forest products, non-ferrous metals and chemical products; moreover, oil has now started to move in quantity to the United States market. These increases have been partially offset by lower sales of farm products, particularly grains, to that country.

There has been a substantial rise in commodity exports to the United Kingdom this year. For the January-September period the export totals were \$462·6 million in 1954 and \$585·8 million this year, an increase of 26·6 per cent. This improvement has been spread through a range of products including wheat, barley, forest products and base metals.

In general, the weakness in the Canadian export trade situation has been the moderate decline in secondary manufactured products; the level of exports of grain and other agricultural products has remained roughly unchanged from last year.

The higher level of exports has been accompanied by a proportionate rise in commodity imports. In the first nine months of 1955, the estimated total value of merchandise imports was \$3,429 million, up 12·4 per cent over the corresponding period of 1954, with greater purchases of a variety of goods including foodstuffs, textiles, machinery, chemicals and consumer goods. The rise in the value of imports occurred almost entirely in purchases from the United States. Thus, the regional imbalance of trade has been further accentuated with Canada's surplus with the United Kingdom climbing to \$292 million in the first nine months of 1955 from \$162 million in the comparable period in 1954, while the deficit with the United States has grown from \$470 to \$626 million.

Investment. — In contrast to 1954, capital investment has been an expansionary influence in the economy during the current year. The mid-year survey of investment intentions indicated that capital expenditures in 1955 would reach \$5,954 million, which if accomplished, would be the highest total on record. This involves a capital program eight per cent greater than in 1954 with outlays for construction being 11 per cent higher and investment in machinery and equipment about one per cent greater.

The effect of an improved export trade is also evident in the capital spending program for this year. In manufacturing, where the total increase in investment is expected to be 14 per cent, the significant increases in investment are expected to take place in industries very dependent on export markets. Capital outlay in the paper products industry is expected to be 73 per cent greater than in 1954; a 76 per cent increase is anticipated in the chemical products industry, and a 53 per cent increase in the non-ferrous metals industry.

An increased rate of capital spending is expected in the service sector and in the construction industry. In this regard,

¹ Based in a review of the domestic situation prepared by the Domestic Situation Committee of the 1955 Federal-Provincial Agricultural Conference.

residential construction has shown a strong upward trend; housing starts for the first nine months of 1955 were 22 per cent higher than in the corresponding period of 1954. Interest in resource development continues strong, particularly in base metals and pulp and paper. Gas and oil development also remains active, and a start has been made this year on the St. Lawrence power and navigation project.

Consumer expenditure.—The improved economic conditions during the first half of this year have led to a strong consumer income position. Labor income in the first half of the year was six per cent greater than in the first six months of 1954, reflecting greater employment and higher wage rates. Investment income is also higher. Corporate profits appear to be up substantially with a greater volume of business and sales. Other components of investment income received by individuals such as interest and rents, have shown moderate gains from 1954. One other favorable feature of the income pattern has been the apparent halt in the downward trend in farm income in recent years.

During the first six months of this year, the net result of these income changes has been a level of personal income six per cent higher than in the same period of 1954; this expansion in personal income has been reflected in an increase in consumer spending. Consumer outlays for goods and services increased substantially from the first to the second quarter of 1955 and by the second quarter were running at an annual rate six per cent above the 1954 level. In contrast to last year, all major groups of goods and services have shared in this increase. Durable goods sales were ten per cent higher in the first six months of this year compared with the same period in 1954. With regard to non-durable goods, greater consumer expenditure for food, tobacco, and alcoholic beverages has accounted for most of the four per cent increase in this group in the first half of 1955.

Production.—The general step-up in economic activity in 1955 has pushed the index of industrial production to new record heights. For the January-August period total industrial production was 7.5 per cent greater than in 1954. Manufacturing production was 5.9 per cent greater this year; the non-durables

component advanced 5.3 per cent and the durables component registered a gain of 6.5 per cent. In the non-durable section the most pronounced rise in production was in the textile industry which for the eight-month period showed an 18 per cent increase. However, this recovery seems to stem largely from the reduction in inventories last year. Gains of some magnitude were also made by the rubber products industry, the food and beverage, tobacco products and paper products industries. In the durable goods sector, significant production increases have taken place in the wood products industry, non-ferrous metal products, non-metallic mineral products and electrical apparatus industries, and the sharp pick up in activity in the motor vehicle industry which began in the second quarter of this year meant that production in that industry was 23 per cent greater on an eight-months' comparison with 1954.

The outstanding development in the pattern of Canadian industrial production has been the rise in mining production. On a January to August comparison with 1954, the index of mining production has risen 15 per cent reflecting the strength in world markets for base metals and the increasing domestic requirements in the metal using industries.

Employment.—The general strengthening in market and production trends has, of course, been reflected in the labor market. As is customary, the upturn in employment has not been as pronounced as in production. Increased employment in the service and primary industries was soon followed by an upturn in manufacturing and in other sectors of activity. As a result job opportunities expanded and by August the number of persons with jobs in Canada was four per cent greater than a year before.

Farm income.—Estimated farm cash income from the sale of farm products plus supplementary payments for 1955 is not expected to be significantly different from the 1954 total. However, a much higher value for farm-held inventories is expected for the end of the year compared with the end of 1954 whereas farm operating expenses and depreciation charges will be only slightly higher with the result that farm net income for the current year is expected to be well above that of the previous year.

Anticipated income from participation payments and coarse grain marketings will be much lower in 1955 than in 1954 but the reduction is expected to be nearly offset by increased returns from such items as wheat, cattle and P.F.A.A. payments. Higher total marketings of wheat should result in increased income from this source for the current year. Livestock marketings have shown some increase in 1955, particularly hogs. Cattle prices have not changed significantly since last year but hog prices have been much lower with the result that cash income from the sale of livestock is not expected to vary greatly from the 1954 total.

Year-end farm inventories of both grains and livestock will be higher than last year. Increases in farm-held grain stocks will be particularly significant, as a result of a large crop and a heavy carryover in commercial channels.

Farm production. — A preliminary estimate indicates that the index of Canada's agricultural production in 1955 will be well above the 1954 estimate of 114.3 (1935-39=100). Substantial contributions to the increase were made by the large western grain crops and increased output of livestock, particularly hogs; to a somewhat lesser extent the agricultural output was increased by larger fruit, vegetable and potato crops.

Prices of commodities and services used by farmers.—Prices paid by farmers for commodities and services used for production and for living costs in 1955 were virtually unchanged from those of a year ago. While prices of farm machinery, building materials and feed were slightly higher, lower prices prevailed for farm family living, gasoline, oil, grease, fertilizer, twine, hardware and farm labor.

Current Developments

Prices.—The consumer price index remained practically unchanged between September 1 and October 1, moving from 116.8 to 116.9 (1949=100). The 1954 October index was 116.8. The food index declined from 113.7 to 113.5 as somewhat lower prices were recorded for most cuts of pork and beef, lamb, chicken, potatoes, apples and a number of canned and fresh fruits and vegetables. Small price increases were shown for fats, coffee, fresh tomatoes and lettuce. The shelter index advanced slightly from 130.0 to 130.2 and the clothing index remained unchanged.

The general wholesale price index advanced 0.6 per cent to 220.9 from 219.6 between August and September. The animal products group rose 0.7 per cent to 230.1 and the vegetable products group declined 0.5 per cent to 192.9.

Milk production.—Estimated total milk production for the month of September was placed at 1,724 million pounds, almost seven per cent above that of the corresponding month in 1954. It represents the highest September milk-flow since 1947. Milk production for the month of August was placed at 1,821 million pounds, up 1.5 per cent from August 1954. Cumulative totals for the January-September period were 13,316 million pounds in 1954 and 13,499 million pounds in 1955.

Loans to grain producers.—On November 5, 1955, the Minister of Trade and Commerce announced that arrangements had been made with the chartered banks to facilitate loans to grain producers in the Prairie Provinces.

Loans, up to a maximum of \$1,500, will be made available to producers, in order to meet financial difficulties arising from their inability to deliver grain because of congested storage conditions. If the value of the grain the producer may become entitled to deliver in the current crop year is less than \$3,000, or if the producer has been able to deliver grain since August 31, 1955, against 1955-56 delivery quotas, loans will be correspondingly lower than the \$1,500 figure.

The rate of interest on the loans shall not exceed five per cent per annum, simple interest. The banks have been authorized to grant guaranteed loans up to an aggregate of \$50,000,000.

The liability of the Canadian Government to the banks in case of defaulted loans will not arise until October 1, 1956, and will be limited to:

- (a) guaranteed loans made on or after November 15, 1955, and before June 1, 1956;
- (b) in the case of each bank, 15 per cent of its total guaranteed loans up to an aggregate principal amount of \$100,000 and 10 per cent of the aggregate principal amount exceeding \$100,000.

THE FINANCIAL STRUCTURE OF CANADIAN LOCAL OR DISTRICT MARKETING CO-OPERATIVES¹

H. K. INGERSOLL

In Eastern Canada and British Columbia, many local co-operatives are engaged in marketing the wide variety of agricultural commodities produced. In Manitoba, Saskatchewan and Alberta large co-operatives have developed which serve broad regions and market one or a group of products. However, there are some small or local marketing co-operatives in the prairie provinces and some large regional associations in other provinces.

Each of the large regional associations requires a large amount of capital. The use made of this capital varies according to the type of products handled, the volume of business and membership preferences. As a result the financial structure of one of these co-operatives may differ greatly from that of other large co-operatives and even more so from that of the smaller ones.

There is a large number of local or district marketing co-operatives in Canada. Most of these are small associations with more uniformity in their financial structure than the larger co-operatives. An analysis of the structure and financing methods of a representative group of such local associations may be of interest to similar organizations throughout the country.

As part of a study of co-operative financing, a random sample of about 20 per cent of the local marketing co-operatives which submitted reports to the Economics Division for the years 1947 to 1951, was selected. Co-operatives with assets over \$500,000 as well as smaller ones which did not submit reports regularly throughout the period were excluded from this sample. In the end, the balance sheets of 85 associations were analyzed.

ASSETS

Total Assets.—Among the co-operatives included in the sample, 24 per cent had assets of less than \$10,000 each, 23 per cent had assets ranging from \$10,000 to \$25,000, and 37 per cent had assets ranging from \$25,000 to \$75,000, throughout the five-year period. Eight co-operatives had assets between \$100,000 and \$200,000 and only four had assets exceeding \$200,000.

The average total assets of these local marketing co-operatives increased sharply from 1947 to 1949 but declined somewhat in 1950 (Table 1). A major factor in the changes in value of total assets was the year-to-year fluctuation in merchandise inventories. The change in value of plant less depreciation probably is more indicative of the actual growth of these co-operatives during the period concerned than that in total assets. The increase of \$4,152 in the value of physical plant, about 20 per cent, is a good measure of actual expansion as, in the absence of acquisition of new facilities, the book value of plant would have declined by the amount of depreciation charged. It may also be noted that net receivables also increased steadily during this period. This is not necessarily an unhealthy development in marketing co-operatives as an upward trend in sales might result in increased accounts receivable. Balance sheet data give no indication of the extent to which these receivables included risky or doubtful accounts.

Composition of Assets.—Over the five years covered by the study the current assets averaged 50 per cent of the total assets (Table 2). Inventories amounted to over half of the total current assets and the remainder was composed almost entirely of the more liquid cash and accounts receivable.

¹ This is the second of a series of articles on the financial structure of Canadian co-operatives. The first article, *The Financial Structure of Canadian Purchasing Co-operatives*, appeared in *The Economic Annalist*, August, 1955.

Variations in inventories accounted largely for the variations in the ratios of current to total assets during this period. A downward trend in cash as a percentage of total assets coincided with an increase in receivables. Thus, in 1947 receivables exceeded the cash by about 30 per cent but by 1951 they were twice as large as cash on hand in banks and credit unions.

When the composition of assets is related to products marketed, inventories again vary sharply (Tables 3 and 4). Eggs and poultry and dairy products are produced continuously, and local co-operatives marketing these products do not normally store them over prolonged periods. Thus, these co-operatives do

Table 1.—Local Marketing Co-operatives—Average Assets and Liabilities, 1947-1951

	1947	1948	1949	1950	1951	Average 1947-1951
ASSETS						
	—dollars—					
Cash on hand and in bank and credit union.....	4,840	4,355	5,357	3,597	4,412	4,506
Receivables less bad debts.....	5,870	6,383	6,801	8,351	9,356	7,377
Merchandise on hand.....	10,068	12,201	19,241	15,196	12,730	13,933
Other current assets.....	680	605	475	514	1,079	671
Total current assets.....	21,458	23,544	31,874	27,658	27,577	26,487
Plant less depreciation.....	21,233	22,137	22,621	24,189	25,385	23,144
Investments in wholesale or central.....	672	777	1,045	1,091	900	900
Other assets.....	1,815	2,279	2,270	2,301	2,717	2,283
Total assets.....	45,178	48,737	57,810	55,239	56,579	52,814
LIABILITIES TO THE PUBLIC						
Bank and credit union loans.....	4,439	6,335	7,721	5,512	5,526	5,923
Accounts payable.....	7,179	6,343	8,404	6,916	8,083	7,388
Accrued expenses.....	534	491	343	627	767	553
Other current liabilities.....	833	1,066	1,711	2,643	2,184	1,701
Total current liabilities.....	12,985	14,235	18,179	15,699	16,560	15,565
Mortgages and deferred liabilities.....	6,534	7,560	10,264	9,415	7,751	8,327
Total liabilities to the public.....	19,520	21,795	28,443	25,114	24,311	23,892
MEMBERS' EQUITY						
Loans from members.....	3,297	4,010	3,869	4,529	5,010	4,156
Surplus allocated to members.....	6,371	6,045	7,797	7,087	7,816	7,033
Liabilities to members.....	9,668	10,055	11,666	11,616	12,826	11,189
Share capital and membership fees.....	7,263	9,048	9,692	10,293	10,772	9,445
Reserve not allocated to members.....	3,572	3,684	3,752	4,103	4,097	3,846
Undivided surplus.....	5,155	4,155	4,257	4,113	4,573	4,442
Net worth.....	15,990	16,887	17,701	18,509	19,442	17,733
Members' equity.....	25,658	26,942	29,367	30,125	32,268	28,922
Total liabilities and members' equity.....	45,178	48,737	57,810	55,239	56,579	52,814

not have large inventories in either money value or as a percentage of total assets. Other agricultural products are generally produced on an annual crop basis and marketing agencies usually accumulate large inventories in the period immediately following harvest while sales and deliveries occur more evenly throughout the year. Moreover, with the less perishable products, considerable volumes may be carried over from one year to the next.

Plant amounted to from 60 to 70 per cent of the assets exclusive of inventories in dairy products, fruit and vegetables, and grain and seed co-operatives. In co-operatives marketing eggs and poultry, the proportion was almost 60 per cent but it was less than 40 per cent for the miscellaneous products co-operatives.

The ratio of current assets to current liabilities, the working capital ratio, was fairly constant at about 1.7 to 1 for the five years. The working capital ratio of 3.8 to 1 of the egg and poultry group was considerably higher than for the others; it ranged from 2 to 1 for the grain and seed co-operatives down to 1.4 to 1 for the dairy products group.

Table 2.—Local Marketing Co-operatives—Average Distribution of Assets and Liabilities, 1947-51

	1947	1948	1949	1950	1951	Average 1947-51
ASSETS	—per cent—					
Cash on hand and in bank and credit union.....	10.7	8.9	9.3	6.5	7.8	8.5
Receivables less bad debts.....	13.0	13.1	11.7	15.1	16.5	14.0
Merchandise on hand.....	22.3	25.1	33.3	27.5	22.5	26.4
Other current assets.....	1.5	1.2	.8	.9	1.9	1.3
Total current assets.....	47.5	48.3	55.1	50.0	48.7	50.2
Plant less depreciation.....	47.0	45.4	39.1	43.8	44.9	43.8
Investment in wholesale or central.....	1.5	1.6	1.9	2.0	1.6	1.7
Other assets.....	4.0	4.7	3.9	4.2	4.8	4.3
Total assets.....	100.0	100.0	100.0	100.0	100.0	100.0
LIABILITIES TO THE PUBLIC						
Bank and credit union loans.....	9.8	13.0	13.4	10.0	9.8	11.2
Accounts payable.....	15.9	13.0	14.5	12.5	14.3	14.0
Accrued expenses.....	1.2	1.0	.6	1.1	1.3	1.0
Other current liabilities.....	1.8	2.2	3.0	4.8	3.9	3.2
Total current liabilities.....	28.7	29.2	31.5	28.4	29.3	29.4
Mortgages and deferred liabilities.....	14.5	15.5	17.7	17.1	13.7	15.8
Total liabilities to the public	43.2	44.7	49.2	45.5	43.0	45.2
MEMBERS' EQUITY						
Loans from members.....	7.3	8.2	6.7	8.2	8.9	7.9
Surplus allocated to members.....	14.1	12.4	13.5	12.8	13.8	13.3
Liabilities to members.....	21.4	20.6	20.2	21.0	22.7	21.2
Share capital and membership fees.....	16.1	18.6	16.7	18.6	19.0	17.9
Reserve not allocated to members.....	7.9	7.5	6.5	7.4	7.2	7.3
Undivided surplus.....	11.4	8.5	7.4	7.5	8.1	8.4
Net worth.....	35.4	34.6	30.6	33.5	34.3	33.6
Members' equity.....	56.8	55.3	50.8	54.5	57.0	54.8
Total liabilities and members' equity.....	100.0	100.0	100.0	100.0	100.0	100.0

LIABILITIES AND CAPITAL

Liabilities to the Public.—The average local marketing co-operative in Canada obtained 45 per cent of its capital from the public. Almost two-thirds of this "public" capital consisted of short term loans from lending institutions or credit granted by suppliers. The remainder was obtained on mortgages and deferred liabilities and represented long-term capital.

Of all commodity groups, the fruit and vegetables group, with a ratio of 59 per cent, showed the largest proportion of capital obtained from the public. More than half of this public capital was obtained on mortgages and other long-term liabilities. Public capital used by the egg and poultry co-operatives averaged slightly over one-quarter of their total capital. Two-fifths of this capital was represented by current liabilities and the remainder by mortgages.

Table 3.—Local Marketing Co-operatives—Average Assets and Liabilities, According to Products Marketed, 1947 to 1951

	Dairy products	Eggs and poultry	Fruits and vegetables	Grains and seeds	Miscellaneous products
—dollars—					
ASSETS					
Cash on hand and in bank and credit union.....	2,408	4,316	3,489	7,332	21,062
Receivables less bad debts.....	5,215	2,214	11,428	6,691	24,570
Merchandise on hand.....	5,089	1,182	23,864	16,326	76,623
Other current assets.....	597	8	820	760	757
Total current assets.....	13,309	7,720	39,601	31,109	123,012
Plant less depreciation.....	19,088	11,079	38,928	29,237	29,113
Investments in wholesale or central.....	617	615	1,335	3,307	72
Other assets.....	2,397	401	3,982	533	1,831
Total assets.....	35,411	19,815	83,846	64,186	154,028
LIABILITIES TO THE PUBLIC					
Bank and credit union loans.....	2,956	1,002	8,612	4,005	29,474
Accounts payable.....	4,867	914	10,001	5,175	34,379
Accrued expenses.....	244	125	572	3,611	622
Other current liabilities.....	1,361	.....	2,382	2,381	4,013
Total current liabilities.....	9,428	2,041	21,567	15,172	68,489
Mortgages and deferred liabilities.....	4,277	3,129	28,056	6,461	5,060
Total liabilities to the public.....	13,705	5,170	49,623	21,633	73,549
MEMBERS' EQUITY					
Loans from members.....	5,782	316	4,566	.....	27
Surplus allocated to members.....	2,359	5,214	5,385	9,154	47,606
Liabilities to members.....	8,141	5,530	9,951	9,154	47,633
Share capital and membership fees.....	6,863	2,296	16,131	19,460	16,568
Reserve not allocated to members.....	2,343	2,947	5,086	13,626	3,015
Undivided surplus.....	4,359	3,872	3,055	313	13,263
Net worth.....	13,565	9,115	24,272	33,399	32,846
Members' equity.....	21,706	14,645	34,223	42,553	80,479
Total liabilities and members' equity.....	35,411	19,815	83,846	64,186	154,028

Members' Equity.—Co-operatives, like other business enterprises, require a large proportion of owner capital for sound financing. It is desirable that the largest part of the member capital should be contributed in proportion to the benefits received.

Share capital, undivided surplus, and reserves, which together form the net worth, increased by about the same ratio as the total assets and averaged nearly 34 per cent of the total capital over the five years. Net worth, loans from members, and surplus allocated to members constitute the members' equity.

The ratio of members' equity to total capital decreased from 57 per cent in 1948 to 51 per cent in 1949, largely owing to the allocation and distribution of savings by the co-operatives. In 1950 and 1951 the contributions of member capital increased, with the result that members' equity at the end of 1951 was 57 per cent of the total capital. The five-year average ratio of members' equity to total capital for all Canada was 54·8 per cent.

Table 4.—Local Marketing Co-operatives—Average Distribution of Assets and Liabilities by Products Marketed, 1947-51

	Dairy products	Eggs and poultry	Fruits and vegetables	Grains and seeds	Miscellaneous products
ASSETS	—per cent—				
Cash on hand and in bank and credit union.....	6·8	21·8	4·2	11·4	13·7
Receivables less bad debts.....	14·7	11·2	13·6	10·4	16·0
Merchandise on hand.....	14·4	6·0	28·5	25·4	49·7
Other current assets.....	1·7	.....	1·0	1·2	·5
Total current assets.....	37·6	39·0	47·3	48·4	79·9
Plant less depreciation.....	53·9	55·9	46·4	45·6	18·9
Investment in wholesale or central.....	1·7	3·1	1·6	5·2	.....
Other assets.....	6·8	2·0	4·7	·8	1·2
Total assets.....	100·0	100·0	100·0	100·0	100·0
LIABILITIES TO THE PUBLIC					
Bank and credit union loans.....	8·3	5·1	10·3	6·2	19·1
Accounts payable.....	13·8	4·6	11·9	8·1	22·3
Accrued expenses.....	0·7	·6	·7	5·6	·4
Other current liabilities.....	3·8	.....	2·8	3·7	2·6
Total current liabilities.....	26·6	10·3	25·7	23·6	44·4
Mortgages and deferred liabilities.....	12·1	15·8	33·5	10·1	3·3
Total liabilities to the public.....	38·7	26·1	59·2	33·7	47·7
MEMBERS' EQUITY					
Loans from members.....	16·3	1·6	5·4	.....	.....
Surplus allocated to members.....	6·7	26·3	6·5	14·3	30·9
Liabilities to members.....	23·0	27·9	11·9	14·3	30·9
Share capital and membership fees.....	19·4	11·6	19·2	30·3	10·8
Reserve not allocated to members.....	6·6	14·9	6·1	21·2	2·0
Undivided surplus.....	12·3	19·5	3·6	·5	8·6
Net worth.....	38·3	46·0	28·9	52·0	21·4
Members' equity.....	61·3	73·9	40·8	66·3	52·3
Total liabilities and members' equity.....	100·0	100·0	100·0	100·0	100·0

Among the different types of co-operatives the egg and poultry and the grain and seed groups showed the highest ratios of members' equity with 73·9 per cent and 66·3 per cent, respectively, and the fruit and vegetables group had the lowest average with 40·8 per cent.

**COST OF PRODUCING CROPS IN THE EASTERN TOWNSHIPS OF QUEBEC
1951 and 1953**

L. R. FORTIER and A. GOSSELIN

The study of the production of feed crops carried on by the Economics Division in 1951 and 1953, in seven counties of the Eastern Townships of Quebec, included an analysis of the comparative costs of producing various types of crops as well as a review of the cropping practices followed.¹

Methods of Computing Costs.—The comparative costs of producing the main farm crops used for feeding dairy cattle—roughage and coarse grains—were calculated for the 1951 and 1953 crops, for the 64 farms surveyed in both years. The costs per arpent of producing each crop were based on the average costs for these two years. The costs per unit (ton or bushel) were based on average yields for the three years 1951-53 (yields for 1952 were obtained during the 1953 survey). The basic data used in calculating these costs were obtained from the farmers through the survey method.

In calculating these costs the following methods were used: man labor was valued at 50 cents per hour and tractor costs at 85 cents per hour. Machinery costs, for the farms reporting, were calculated for mowers, rakes, loaders, binders and silage cutters or blowers. Other machinery and horse labor costs were based on estimates made by the Field Husbandry Division, Experimental Farms Service². Grass seed costs were divided equally among hay and pasture. Home-grown grain used for seed was valued at the local market price. Manure was valued at \$2.00 per ton; 50 per cent of it was charged to the crop on which it was applied, 30 per cent to the crop in the following year and 20 per cent to the third crop. Commercial fertilizer was valued at cost; 70 per cent of it was charged to the crop for which it was applied and 30 per cent to the crop in the following year. Charges for lime were spread equally among the five crops which followed the application of lime.

A charge, representing about five per cent of the value of the land, was made for the use of the land by each individual crop, and for the land share of interest and taxes.

Overhead costs, including fencing, ditching and other costs, were computed on the basis of a flat rate of \$1.00 per arpent.

Grain.—Fifty-five farmers had 1,345.6 arpents of small grain in 1951 and 1,257.3 arpents in 1953. The yield for the three-year period 1951-53 averaged 35 bushels per arpent. Total costs of producing grain per arpent averaged \$29.02 (Table 1). In calculating total costs \$5.67 were allotted for the use of straw. Growing costs averaged \$26.69, or 77 per cent of the total costs. Fertilizer, manure and lime costs averaged \$9.78 per arpent, or 37 per cent of the growing costs; man, horse and tractor costs averaged \$7.13, or 27 per cent of the growing costs and seed \$3.80, or 14 per cent. Harvesting costs averaged \$8.00 per arpent, man labor alone representing 38 per cent of the total harvesting costs. Total costs averaged 84 cents per bushel of grain.

The costs for each crop have been divided into three groups—the third of the farms with the lowest cost per bushel or per ton, the third of the farms with about average costs, and the third with the highest costs.

High yields and low costs per arpent resulted in low costs per bushel of grain (Table 2). Farms in the lowest third group had an average cost

¹ See Cropping Practices in the Eastern Townships, Quebec. *The Economic Annalist*. April, 1955.

² Cost of Operating Farm Machinery in Eastern Canada, Kalbfleisch, W. and A. I. Magee, Publication 750, Canada Department of Agriculture.

Table 1.—Costs of Grain Production, per Arpent and Per Bushel, 55 Farms, Eastern Townships, Quebec, 1951 and 1953

	Amount per arpent	Cost per arpent	Cost per bushel
	—units—	—dollars—	
Growing costs—			
Man labor (hours).....	5.8	2.94	.08
Horse labor (hours).....	5.0	1.82	.05
Tractor labor (hours).....	2.8	2.37	.07
Seed (bushels).....	2.5	3.80	.11
Fertilizer (pounds).....	178.4	4.06	.12
Manure (tons).....	2.4	4.72	.13
Lime (tons).....	2.6	1.00	.03
Machinery.....		2.48	.07
Land, interest, taxes.....		2.50	.07
Overhead.....		1.00	.03
Total growing costs.....		26.69	.76
Harvesting costs—			
Man labor (hours).....	6.1	3.07	.09
Horse labor (hours).....	1.5	.59	.02
Tractor labor (hours).....	1.5	1.35	.04
Machinery.....		2.39	.07
Twine.....		.60	.24
Total harvesting costs.....		8.00	.24
Less straw.....		5.67	.16
Total costs.....		29.02	.84
Yield, 1951-53 (bushels).....	35		

of 59 cents per bushel, \$24.46 per arpent and an average yield of 42 bushels per arpent. For the high third group costs averaged \$33.28 per arpent, \$8.82 more than for the low third group, yields averaged 25 bushels per arpent and the cost per bushel \$1.32 or 73 cents more than the cost for the low third group. There was little difference in harvesting costs per arpent among the three groups. Man hours per arpent averaged ten hours in the low third group compared with 13.5 and 13.6 hours in the middle and high third groups respectively.

Hay.—Information on the cost of producing hay was obtained from 64 farms in 1951 and 1953. These farms harvested hay on 3,077 arpents in 1951 and 3,066 arpents in 1953. The yield for the three-year period averaged 1.4 tons per arpent. Total costs averaged \$17.39 and growing costs averaged \$11.87 per arpent, or 68 per cent of the total costs (Table 3). Manure alone accounted for 42 per cent of the growing costs, and seed, overhead and

Table 2.—Relation of Various Factors to Costs per Bushel of Grain, 55 Farms, Eastern Townships Quebec, 1951 and 1953

	Average costs per bushel	Average yield per arpent		Average growing costs per arpent	Average harvesting costs per arpent	Average charge for use of straw	Average total costs per arpent	Average number of man hours per arpent
		Range	Average					
	-dollars-	-bushels-			-dollars-			-number-
Low third.....	.59	26-74	41.8	23.02	7.67	6.23	24.46	10.0
Middle third.....	.91	25-62	34.4	27.69	8.83	5.02	31.50	13.5
High third.....	1.32	8-57	25.2	31.25	7.55	5.52	33.28	13.6

Table 3.—Costs of Hay Production, per Arpent and per Ton, 64 Farms, Eastern Townships, Quebec, 1951 and 1953

	Amount per arpent	Cost per arpent	Cost per ton
	—units—	—dollars—	
Growing costs—			
Man labor (hours).....	.9	.45	.32
Horse labor (hours).....	.8	.35	.24
Tractor labor (hours).....	.3	.25	.18
Seed.....		1.06	.74
Fertilizer (pounds).....	28.6	.61	.42
Manure (tons).....	2.5	5.04	3.53
Lime (tons).....	.4	.29	.20
Machinery.....		.31	.22
Land, interest, taxes.....		2.50	1.75
Overhead.....		1.00	.70
Miscellaneous.....		.01	.01
Total growing costs.....		11.87	8.31
Harvesting costs—			
Man labor (hours).....	4.6	2.30	1.61
Horse labor (hours).....	2.3	1.00	.70
Tractor labor (hours).....	1.2	1.05	.73
Machinery.....		1.17	.82
Total harvesting costs.....		5.52	3.86
Total costs.....		17.39	12.17
Yield, 1951-53 (tons).....	1.4		

land costs for 38 per cent. Harvesting costs averaged \$5.52 per arpent; man labor represented 42 per cent of these costs, and the remainder was divided about equally among horse labor, tractor labor and machinery costs, each one representing about 18 per cent of all harvesting costs. Total costs averaged \$12.17 per ton of hay.

The difference in total costs per arpent between the low third group and the high third group was a little over \$3.00 (Table 4). A difference in yield of half a ton, and higher growing costs for the high third group resulted in a difference of \$7.05 in total costs per ton between the two groups. Man hours per arpent varied only slightly among the groups.

Corn Silage.—Corn silage is an expensive crop to grow in the Eastern Townships. Twenty-three farms reported harvesting corn silage on 196.2 arpents in 1951 and 203.3 arpents in 1953. The yield for the three-year period 1951-53 averaged 8.2 tons per arpent. Growing costs per arpent averaged \$42.63 and represented 70 per cent of the total costs (Table 5). Fertilizers and manure averaged \$18.71 per arpent, or 44 per cent of the

Table 4.—Relation of Various Factors to Costs per Ton of Hay, 64 Farms, Eastern Townships Quebec, 1951 and 1953

	Average costs per ton	Average yield per arpent		Average growing costs per arpent	Average harvesting costs per arpent	Average total costs per arpent	Average number of man hours per arpent
		Range	Average				
	—dollars—	—tons—		—dollars—			—number—
Low third.....	9.25	1.1-2.8	1.7	10.76	5.24	16.00	5.0
Middle third.....	12.36	.9-2.1	1.4	10.86	6.21	17.06	5.9
High third.....	16.30	.9-2.2	1.2	13.96	5.13	19.09	5.6

Table 5.—Costs of Corn Silage Production, per Arpent and per Ton, 23 Farms, Eastern Townships, Quebec, 1951 and 1953

	Amount per arpent	Cost per arpent	Cost per ton
	—units—	—dollars—	
Growing costs—			
Man labor (hours).....	10.5	5.27	.64
Horse labor (hours).....	8.8	3.92	.48
Tractor labor (hours).....	4.1	3.45	.42
Seed (bushels).....	.4	2.23	.27
Fertilizer (pounds).....	240.0	5.22	.64
Manure (tons).....	6.7	13.49	1.64
Lime (tons).....	.2	1.02	.12
Machinery.....		4.46	.54
Land, interest, taxes.....		2.50	.30
Overhead.....		1.00	.12
Miscellaneous.....		.07	.01
Total growing costs.....		42.63	5.18
Harvesting costs—			
Man labor (hours).....	13.4	6.80	.83
Horse labor (hours).....	5.0	2.21	.27
Tractor labor (hours).....	3.9	3.42	.42
Machinery.....		5.60	.68
Twine.....		.44	.05
Total harvesting costs.....		18.46	2.25
Total costs.....		61.10	7.43
Yield, 1951-53 (tons).....	8.2		

growing costs. Man labor and machinery costs were the highest items of cost in harvesting corn. They represented 37 and 30 per cent respectively of the total harvesting costs. The costs per ton averaged \$7.43.

The low third group had an average yield of 10.4 tons per arpent; total costs averaged \$57.24 per arpent and \$5.38 per ton (Table 6). Total costs per arpent were about the same but the average yield was lower in the middle third group. In the high third group low yield and high costs per arpent resulted in an average cost of \$9.56 per ton. Man hours per arpent are high for a crop such as corn silage. Twenty-one man hours per arpent were required in the low third group compared with 28 man hours in the high third group.

Grass Silage.—Data on costs of producing and harvesting grass silage were obtained from 22 farms which harvested 361 arpents of grass silage in 1951 and 346 arpents in 1953. The yield for the three-year period 1951-53 averaged 5.6 tons per arpent. Growing costs averaged \$17.51 and harvesting costs

Table 6.—Relation of Various Factors to Costs per Ton of Corn Silage, 23 Farms, Eastern Townships, Quebec, 1951 and 1953

	Average costs per ton	Average yield per arpent		Average growing costs per arpent	Average harvesting costs per arpent	Average total costs per arpent	Average number of man hours per arpent
		Range	Average				
	-dollars-	-tons-			-dollars-		-number-
Low third.....	5.38	8.3-13.5	10.4	36.65	20.59	57.24	21.6
Middle third.....	7.82	6.6-9.0	7.5	41.86	16.76	58.62	22.7
High third.....	9.56	4.7-9.4	7.1	48.72	18.77	67.49	28.2

Table 7.—Costs of Grass Silage Production, per Arpent and per Ton, 22 Farms, Eastern Townships Quebec, 1951 and 1953

	Amount per arpent	Cost per arpent	Cost per ton
	—units—	—dollars—	
Growing costs—			
Man labor (hours).....	1.4	.73	.13
Horse labor (hours).....	.7	.42	.07
Tractor labor (hours).....	.6	.50	.09
Seed.....		1.36	.24
Fertilizer (pounds).....	111.5	2.47	.44
Manure (tons).....	3.9	7.86	1.41
Lime (tons).....		.17	.03
Machinery.....		.50	.09
Land, interest, taxes.....		2.50	.45
Overhead.....		1.00	.18
Total growing costs.....		17.51	3.13
Harvesting costs—			
Man labor (hours).....	9.3	4.67	.84
Horse labor (hours).....	2.8	1.50	.27
Tractor labor (hours).....	2.8	2.50	.45
Machinery.....		4.18	.75
Miscellaneous.....		1.02	.18
Total harvesting costs.....		13.87	2.49
Total costs.....		31.38	5.62
Yield, 1951-53 (tons).....	5.6		

\$13.87 per arpent (Table 7). Fertilizers and manure alone represented 59 per cent of the growing costs. Large applications of fertilizers and manure were made on hay fields harvested as grass silage. Total costs averaged \$5.62 per ton.

Growing costs averaged \$12.23 per arpent for the low third group and \$21.57 for the high third group (Table 8). Corresponding figures for average costs per ton were \$3.99 and \$7.73 respectively. The average number of man hours of work per arpent ranged from eight in the first group to 13.7 in the other one.

Costs of Nutrients.—Next to pasture, hay was the main source of nutrients. It supplied 55,700 pounds of total digestible nutrients (TDN) per farm compared with grain which supplied 23,204 pounds per farm. On corn silage farms, corn silage supplied 19,817 pounds of TDN per farm and on grass silage farms grass silage supplied 23,620 pounds per farm.

Table 8.—Relation of Various Factors to Costs per Ton of Grass Silage, 22 Farms, Eastern Townships, Quebec, 1951 and 1953

	Average costs per ton	Average yield per arpent		Average growing costs per arpent	Average harvesting costs per arpent	Average total costs per arpent	Average number of man hours per arpent
		Range	Average				
	-dollars-	-tons-		-dollars-			-number-
Low third.....	3.99	3.8-10.6	6.3	12.23	12.73	24.96	8.0
Middle third.....	5.70	4.4-7.9	5.7	18.77	13.57	32.34	10.7
High third.....	7.73	3.7-7.3	4.8	21.57	15.35	36.92	13.7

Table 9.—Cost of Producing Nutrients for Farm-Grown Crops and Cost of Purchased Grain, per 100 Pounds of TDN, Eastern Townships, Quebec, 1951 and 1953

	Average yields 1951-53		Cost per arpent	Man hours per arpent	Cost per 100 lb. TDN	Man hours per 100 lb. TDN
	Bu. or tons	TDN lb.				
Farm grown crops—						
Mixed grain.....	35.0	1,120	29.02	11.9	2.59	1.0
Oats.....	35.0	770	29.02	11.9	3.77	1.5
Hay.....	1.4	1,120	17.39	5.5	1.55	.5
Grass silage.....	5.6	1,792	31.38	10.7	1.75	.6
Corn silage.....	8.2	2,460	61.10	23.9	2.48	1.0
Purchased grain—						
Ground barley.....					4.61	
Ground oats.....					4.63	

The costs per 100 pounds of TDN averaged \$1.55 for hay and \$1.75 for grass silage (Table 9). Corn silage was a more expensive source of nutrients; it averaged \$2.48 per 100 pounds of TDN. Farm-grown grain, at \$2.48 per 100 pounds of TDN for mixed grain and \$3.77 for oats, had a relative advantage over purchased ground barley and ground oats.

Selection of Crops.—Table 10 presents a summary of cropping programs suggested for a 100-arpent farm in the Eastern Townships. They are based on a five-year rotation. The first program includes 20 arpents of mixed grain

Table 10.—Effect of Introduction of Grass Silage or Grass and Corn Silage on a 100-Arpent Farm, Eastern Townships, Quebec

	100 Arpents in crops			
	Arpents	Total costs	Total TDN	Cost per 100 lb. TDN
	—number—	\$	lb.	\$
No silage—				
Mixed grain.....	20	580	22,400	2.59
Hay.....	80	1,391	89,600	1.55
Total.....	100	1,971	112,000	1.76
Grass silage—				
Mixed grain.....	20	580	22,400	2.59
Grass silage.....	40	1,255	71,680	1.75
Hay.....	40	695	44,800	1.55
Total.....	100	2,530	138,880	1.82
Grass and corn silage—				
Mixed grain.....	30	870	33,600	2.59
Corn silage.....	10	611	24,600	2.48
Grass silage.....	20	628	35,840	1.75
Hay.....	40	695	44,800	1.55
Total.....	100	2,804	138,840	2.02

and 80 arpents of hay; the second one, 20 arpents of mixed grain, 40 arpents of hay and 40 arpents of grass silage; the third one, 30 arpents of mixed grain, 40 arpents of hay, 20 arpents of grass silage and 10 arpents of corn silage. By shifting 40 arpents from the production of hay in the first cropping program to that of grass silage, the total number of TDN is increased by 26,880 pounds. Total costs are increased by \$559 but this increase will be more than offset by income from a larger number of cows to be kept on the farm and a reduction in feed purchases.

The third cropping program supplies the same quantity of TDN as the second program; total costs, however, are \$274 higher.

On the basis of average yields and costs for the 64 farms included in this study, winter feed requirements for a cow producing 8,000 pounds of milk, 4 per cent butterfat, from a ration composed of one ton of hay, four tons of silage and 30 bushels of mixed grain would cost \$60.00 and be produced on 2.3 arpents. A ration including two tons of hay and 30 bushels of mixed grain would cost \$50.00 and be produced on 2.3 arpents; but in this case, an additional \$30.00 worth of protein supplements would be required.

Conclusion.—In reorganizing their cropping programs farmers would be well advised to consider which crop will supply the largest quantity of nutrients at the lowest costs. A shift to more grass, as a long range program of soil conservation and increased livestock production, might help maintain or increase soil fertility and stabilize income.

FUNCTIONS OF THE UNITED KINGDOM MARKETING BOARDS¹

ROGER PERREAULT

The three major Acts governing the operations of the British marketing boards are the Agricultural Marketing Acts of 1931, 1933 and 1949. These Acts enable producers, acting as a group, to regulate the marketing of their agricultural products. Provision is made for specific marketing plans or "schemes" and for setting up producers' marketing boards whose chief responsibility is to administer the schemes.²

The United Kingdom was one of the first countries to establish such boards. Currently, there are nine in operation.³ They include the Hops Marketing Board, the Tomato and Cucumber Marketing Board, the Wool Marketing Board, the Milk Marketing Boards (one in England and Wales, three in Scotland, and another in Northern Ireland), and the Potato Marketing Board. In addition, the Fatstock Marketing Corporation is worthy of attention because of its importance in the marketing of livestock and its similarities to the marketing boards. The marketing boards and the Fatstock Marketing Corporation handle about 50 per cent in value of the agricultural products marketed in that country.

The United Kingdom marketing boards operate in a country that imports roughly half of her food. This major food importer of the world takes 40 per cent of the total world trade in food, 70 per cent of the meat, 73 per cent of the butter, 42 per cent of the cheese, and nearly 20 per cent of the wheat trade. Consumers have the freedom to select from various types of products imported at competitive prices subject, of course, to the availability of foreign exchange and of income.

¹ Based on a paper given at the meetings of the Corporation des Agronomes de la province de Quebec on June 29, 1955 in Quebec City. The author wishes to acknowledge the assistance received from Frank Shefrin and G. P. Boucher of the Economics Division and D. A. B. Marshall, Commercial Secretary (Agriculture), London.

² The marketing boards also provide services other than marketing. For instance, the Milk Marketing Board of England and Wales assists its members in obtaining milk recording, artificial insemination, and grass drying services for their dairy herds.

³ The Bacon Marketing Board has advisory powers only.

On the other hand, farmers have large urban markets at their doorstep and a good transportation system. The geographical area is small. These factors help to make it easier to bring into effect collective plans for the disposal of home grown produce.

The marketing boards have been developed under different types of economic conditions. However, the Agricultural Marketing Acts have been largely complementary and cumulative in their effects.

Four periods can be distinguished in the development of the marketing boards: the depression, the war, the early postwar, and the decontrol and derationing periods. During the depression, the home market was protected against foreign competition. The marketing boards established under the Agricultural Marketing Acts of 1931 and 1933, were primarily price stabilizing agencies.¹ At the outbreak of the war, the Ministry of Food took over the management of food supplies and agricultural production was mobilized for the duration. The Defence (Agriculture and Fisheries) Regulations 1939 suspended the marketing schemes but in some cases increased the powers of the Boards, although they had to obey the instruction of the appropriate Minister.

Under the authority of the Agricultural Act of 1947, a comprehensive system of deficiency payments for the major agricultural products was evolved. The purposes of these deficiency payments were to bring the realized market prices up to the levels guaranteed and to give farmers at the same time the incentive to increase their food production. After the passing of the Agricultural Marketing Act of 1949, two marketing boards were established. However, the Ministry of Food still controlled food supplies, and the formulation of government policies relating to marketing schemes was eagerly awaited.

With the decontrol policies of 1953 and 1954, marketing schemes were encouraged, and the marketing powers of the existing boards were restored to a great extent. A few marketing boards have now the function of administering price guarantees.

The Main Features of the Agricultural Marketing Acts of 1931 and 1933—Structure of the British Marketing Boards.—At the outset of the depression, falling prices of agricultural products in the main exporting countries had disrupting effects on British farming. In addition, the commodities sheltered from international competition were over-produced. This situation led to a strong demand for a central type of planning. After many unsuccessful attempts to organize farmers on a voluntary co-operative basis, the first Agricultural Marketing Act was passed by the British Parliament in 1931.

Essentially, the Act legalized majority rule when producers desired to sell their products collectively. It was thought that the implementation of marketing schemes would result in more economical selling by grouping together the products of small scattered farming units, and give farmers greater bargaining power, and better knowledge of the supply and demand conditions for their products.

The Agricultural Marketing Act of 1933 complemented the Act of 1931 essentially by making provision for regulating supplies both of imports and home grown produce.

The definition of the regulated products to which these Acts may apply is very broad:

It covers all primary or processed products of agriculture or horticulture used for food or drink and fleeces and skins of animals. It may be several products or several kinds or varieties of a products.²

¹ They were: the Milk Marketing Boards, the Potato Marketing Board, the Bacon Marketing Board, the Pig Marketing Board, and the Hops Marketing Board.

² The N.F.U. Information Service, National Farmers Union, London. December 1950. p. 241.

The Acts provide for a wide range of powers. The marketing boards—the producers' agencies designed to administer the schemes—can:

Negotiate the conditions and terms of sale; control the grade, description or type of product to be sold; enforce—if necessary—a restriction of output upon its members; enforce all those conditions upon all sellers of the prescribed product by the imposition of financial penalties from infringement of its by-laws, and buy, sell, store or process the prescribed product or its derivatives.¹

To become effective, a marketing scheme must be approved by the Minister of Agriculture and Fisheries, the Parliament and the majority vote of the registered producers.² In this last instance, the vote has to represent:

- (a) not less than two-thirds of the total number of registered producers voting on the poll; and
- (b) registered producers who are capable of producing not less than two-thirds of the quantity of the regulated products which all the registered producers voting on poll are capable of producing.³

The British marketing boards are essentially producers' boards. Each scheme is administered by a board of directors composed of elected representatives of producers, and a few appointed by the Minister of Agriculture and Fisheries.

The initial Acts provide also for the establishment of various bodies, committees and commissions designed to regulate food supplies, to facilitate the operation of the marketing boards and to safeguard the interests of the non-farming groups.

As previously indicated, the Acts provide for a wide range of powers. However, it is up to an organization preparing a scheme to select the powers that will fit in best with the particular conditions under which a given product is produced and marketed. The scheme, finally accepted by the registered producers, becomes the Constitution of the marketing board.

Three kinds of marketing powers have been used by the British marketing boards: the regulatory powers; the contract system; and full trading powers. The first type is concerned with the board's control over the proper grading of the product and the channels of trade through which it is distributed. The second involves a contract between the marketing board and the first processors and/or distributors. In the third case, the board acquires ownership of the crop or other product which by law must be sold by the board.

The 1949 Agricultural Marketing Act.—The Agricultural Marketing Act of 1949 made a few minor amendments to the early acts. The number of government representatives on each board was increased and they were given stronger powers to direct the operations of the marketing boards. The Market Supply Committee was abolished. It was previously responsible for reviewing the circumstances affecting the supplies of agricultural products in the United Kingdom and making recommendations to the Ministers concerned with agriculture as to steps to be taken to regulate that supply.

Under the revised Act, two new marketing schemes were accepted by the registered producers in late 1950—the Wool, and the Tomato and Cucumber Schemes. In April 1953, the Apple and Pear Marketing Scheme was rejected. The non-acceptance was not due to the consumers' opposition but to the large producers' belief that they could do better without it. The scheme failed to secure the two-thirds majority vote on an acreage basis requirement. For the first time, a marketing scheme which had been approved by the Minister of Agriculture and Parliament had failed at the poll.

¹ Whetham, E. H. *British Farming 1939-49*. Thomas Nelson and Sons Ltd. London. 1952. pp. 17-18.

² Producers qualify for a scheme if they grow the regulated product on a statutory minimum of acres and/or have more than so many units of production.

³ Agricultural Marketing Act, 1931, 21 and 22 Geo. 5. Ch. 42, H. M. Stationery Office, London, 1931, p. 4.

Restoration of Powers to the Marketing Boards.—In 1953, the United Kingdom took many measures to speed up decontrols and to return trade to the hands of private trading. Eggs were the first important agricultural commodity to be decontrolled and derationed.

In the White Paper "Decontrol of Food Marketing of Agriculture Produce" (November 1953) the government published its plans to bring wartime controls affecting marketing, distribution and selling prices of agricultural products to an end. The Paper clearly indicated that the government was sympathetic to proposals for agricultural marketing schemes, and that in some cases it would make use of marketing boards to administer price guarantees. In line with the policies suggested in the Paper:

- (1) The Wool Marketing Board has continued to administer price guarantees;
- (2) Full marketing powers were restored to the Milk Marketing Board (April 1954);
- (3) A Fatstock Scheme was set up on a voluntary basis (July 1954);
- (4) The Potato Marketing Board will handle the 1955 potato crop.

Present Policies and Economic Conditions Influencing Marketing Boards.—In the thirties, British marketing boards were essentially price stabilizing agencies. Under the present economic conditions, this objective is as important as ever and the boards are co-operating with the government to promote efficient production, to improve the quality of the products marketed, and to achieve more orderly marketing.

To save dollars, the present policy of the government is to expand net agricultural output by about 55 per cent over prewar levels. Continued improvement in yields is called for. Efforts are made to reduce unit costs of production. Economic efficiency is also to be achieved by producing the kinds of products demanded by consumers.

During the thirties, tariffs, import quotas and voluntary agreements with supplying countries were extensively used to protect the home market. Producer subsidies, foreign exchange controls and import licenses are presently used. In 1954, the cost to the Exchequer for subsidies on the guaranteed commodities amounted to about £200 million. The fact that guaranteed prices have been set at higher levels than the prices of imports seems to have limited, in general, the necessity for the marketing boards to bargain prices with the trade. However, this statement does not hold true for the products outside of the Price Reviews and where the bulk of the supplies comes from the United Kingdom.

Another major difference from the policy followed in the thirties is that the government exercises a greater control over the operations of the marketing boards. This is one of the main features of the Agricultural Marketing Act of 1949. Besides, in the White Paper of November 1953, the powers of the Milk Marketing Boards were tied to the necessary safeguards for the Exchequer, consumers and other interests.

Since 1949 a scheme may apply to the whole of the United Kingdom. By bringing the whole country under a scheme, measures to fix prices and involving quantitative control over supplies are facilitated. In addition, home production must account for the bulk of the supplies if the scheme is to be fully effective. It is noticeable that except for wool, in each scheme now in operation, home production accounts for the bulk of the supplies.

Present Structure and Operation of Marketing Boards.—The Hops Marketing Board established in 1932 is in the nature of a complete producers' monopoly. It has remained substantially unchanged. Hops are a most valuable crop which cover an area of only 21,000 acres concentrated in southeastern England.

Imports represent a small proportion of domestic requirements and hops are mainly used to flavor and preserve beer. Under the agreement between the brewers and the Hops Marketing Board, the brewers provide estimates of their requirements. Basic quotas are allotted to hop farms, and deliveries allocated among registered producers of such farms. The average price is fixed each year by the Permanent Joint Hops Committee and is based on the cost of production jointly ascertained by the Hops Marketing Board and the brewers' representatives.

The Tomato and Cucumber Marketing Board represents about 8,400 registered growers producing these products on about 3,300 acres (the area under glass amounts to about 2,800 acres). According to its Constitution, it is empowered:

- (1) to require producers to sell only to or through the Board;
- (2) to determine prices at which producers shall sell;
- (3) to engage in trade in tomatoes and cucumbers;
- (4) to process and preserve them and own and operate their packing stations; and,
- (5) to regulate the grading and marketing by registered powers.

However, "it has, at present, no marketing powers, which under the provisions of the scheme, must be sought from the growers themselves, and which may be granted only with their consent." So far, "it has compiled a list of salesmen through the agency of whom alone tomatoes and cucumbers may be sold by registered producers."¹ It has been active in publicity, grading, packing, research and market intelligence.

The Wool Marketing Board in 1953 included 116,000 producers who produced 69.1 million pounds of clipped wool. The functions of this board are regulatory, its main object being to promote the orderly marketing of wool. It also handles the wool price guarantees through a stabilization fund. If the annual average auction price is lower than the guaranteed price, any money in the stabilization fund goes toward making up the loss. Profits go to the stabilization fund. The Treasury has first call on money from the fund since it would contribute toward making good the guaranteed prices if there were no money in the fund.

The Milk Marketing Board of England and Wales is by far the most important marketing board in the United Kingdom.² It acquires ownership of the total milk output of England and Wales and is responsible for sales. It is a producers' monopoly subject to close government supervision. In the fiscal year ended March 31, 1954, this Board handled 1,678 million gallons of milk bought from 144,398 milk producers, and 26,878 producer-retailers.

The pooled prices received by the producers from this board depend, in the main, on the guaranteed prices negotiated at the Price Review. Briefly, to establish guaranteed milk prices, a standard quantity of milk is determined which is divided into liquid and manufacturing proportions. One guaranteed price is fixed for liquid milk, and the other—much lower—for manufacturing milk. Any milk produced in excess of the standard quantity gets the lower guarantee.

As long as there is an element of subsidy—either at the producers' or consumers' level—the Minister will continue to fix retail prices of liquid milk and to approve the margins. However, when control of prices and margins is lifted, the boards will be free once again to negotiate contract prices of liquid milk with the buyers. (In practice this is with the Central Milk Distributive Committee).

¹ Correspondence with the Tomato and Cucumber Marketing Board.

² The quantity of liquid milk handled by this Board is from five to six times greater than that of the Scottish and Northern Ireland Milk Marketing Boards.

The "substitutional" Potato Marketing Board¹ is now operative for the 1955 crop. The Scheme was approved by Parliament on May 10, 1955. It covers about 115 thousand producers growing potatoes on about 500 thousand to 600 thousand acres. Its powers have been greatly extended but the producers have the freedom to sell their potatoes to the merchants of their choice among those licensed by the board. The board is empowered to:

- (1) buy potatoes from eligible producers provided the potatoes meet the grade requirements,
- (2) operate the support price system through which guaranteed prices will be paid,²
- (3) set minimum prices,
- (4) sell, pack, store, process and transport potatoes,
- (5) allot acreage quotas, etc.

One of the major functions of this board will be to encourage more efficient production, marketing and research. The board cannot make any prescription on minimum prices, "riddle regulations" or acreage quotas without first notifying the Minister of such matters.

The Fatstock Marketing Corporation established in July 1954 is sponsored by the three United Kingdom Farmers' Unions. The Corporation buys cattle, sheep, pork pigs and bacon pigs, slaughters them, pays the farmers according to deadweight and grade, and sells the meat to the trade. It also arranges for stock to be forwarded to buyers who will slaughter on their own account and pay the Corporation on deadweight and grade. The Corporation's profits are returned to the farmers who trade with it in the form of bonuses based on the number and quality of animals they send during the year.

The Bacon Marketing Board which is still the national body representing the bacon industry although with limited powers, has endorsed the F.M.C. and is active in the name of curers in negotiating the terms of bacon contracts with that organization. The F.M.C. now handles about 95 per cent of the bacon pigs, 25 per cent of the cattle and 20 per cent of the sheep marketed in the United Kingdom.

Recent Developments Affecting Marketing Boards.—The actual set up of marketing boards in the United Kingdom is far from being static. The developments of these types of organization will be interesting to watch in the coming years.

Recently, many producers felt that they would be better off without the Tomato and Cucumber Marketing Board. However, a vote of confidence was given to the Board at the last annual general meeting. The Potato Marketing Board has been deprived of proposed powers for manufacturing articles needed in the production and marketing of potatoes. Similar powers have been refused to the milk marketing boards.

The advocates of a marketing scheme for cereals realize that the producers of only 30 per cent of the total cereal requirements would find it difficult to complete with supplies of grain from abroad unless there was some control of imports. For this reason, such a scheme has never been put up formally by

¹ This is the first substitutional scheme established under the Marketing Acts. A substitutional scheme is designed to replace an established scheme. The differences between a "substitutional" scheme and a "new" scheme are: (a) it is not obligatory to conduct a poll on a substitutional scheme: (b) a substitutional scheme is submitted to registered producers before it is formally submitted to Ministers, whereas with a new scheme a poll of producers must take place after Parliamentary approval. Registered producers may, if they wish, demand a poll on the question whether or not the substitutional scheme shall be submitted to Ministers. On this occasion the poll was not necessary.

² The scheme covers all producers in Great Britain. The support price and guarantees and support price system apply only to ware potatoes sold after August, and not to new potatoes.

the N.F.U. However, an Egg Marketing Scheme has been prepared by a joint committee of the three National Farmers' Unions and the draft is now being considered by county branches.¹ Drafts on peas,² herbage seeds, root, vegetable and flower seeds—schemes have been submitted some time ago to the government by the National Farmers' Union.

In April 1955 the government set up a Reorganization Commission on Pigs and Bacon as provided in the Agricultural Marketing Acts. The future of the bacon and pig industry will depend largely on the government action following the report of the Commission. In the same month, a committee of enquiry into horticultural marketing was set up by the Minister of Agriculture. The committee's terms of reference are "to investigate present facilities for, and methods of, marketing home produced and imported vegetables, fruit and flowers; to consider whether the marketing and distribution of such produce can be improved, and to make recommendations."

UNITED NATIONS PUBLICATIONS

Available from: Sales and Circulation Section, Dept. of Public Information, United Nations, New York, U.S.A.

In Canada: The Ryerson Press, 299 Queen St. West, Toronto; and Periodica Inc., 5112 Ave. Papineau, Montreal, 34.

Review of Economic Activity in Africa, 1950 to 1954. (Supplement to World Economic Report, 1953-54.) Department of Economic and Social Affairs. New York. 1955. pp. xi + 146.

A review of the growth of economic activity in Africa (Egypt excluded) during the 1950-54 period, stressing the differences in economic structure and rates of development of the principal regions.

The *Introduction* is followed by chapters on: *Agricultural production; Mining and mineral production; Fuel and power and secondary industries; Labor; Foreign trade; Fiscal developments; and Investment.*

Review of International Commodity Problems, 1954. New York, 1955. pp. viii + 42.

A review prepared by the Interim Co-ordinating Committee for International Commodity Arrangements. It deals with *Inter-governmental action regarding particular commodities*, namely wheat, sugar, tin, tea, cotton, rubber, rice, wool, and dried skim milk; discusses certain questions referred to the Committee in relation to *Coffee and Olive Oil*; and concludes with some general observations on *Procedures for dealing with individual commodities*, stressing the practical value of study groups and the need for continued co-ordination of work on commodity problems. Four appendices are used to review the wheat, sugar, tin, and coffee situation.

OTHER PUBLICATIONS

Royal Commission on Agriculture and Rural Life. **The Scope and Character of the Investigation.** Report No. 1, Submitted to the Government of Saskatchewan, 1955. pp. xiii + 122.

The first report prepared by a Royal Commission appointed by the Government of Saskatchewan in 1952 "to investigate and make recommendations regarding the requirements for the maintenance of a sound farm economy and the improvement of social conditions and amenities in rural Saskatchewan".

The five main purposes of this report are:

"(1) to identify the nature of the Commission's assignment;

¹ Farmer and Stockbreeder, London. August 2-3, 1955. p. 62.

² The draft peas marketing scheme was rejected in July this year. This scheme was submitted to the Ministry of Agriculture in 1950.

- (2) To define the principles which guided the Commission in carrying out the assignment;
- (3) To describe the organization of the investigation and the approach to sources of information;
- (4) To provide a general outline of the subject matter of the full series of reports;
- (5) To suggest some of the ways in which the reports can be used in achieving rural progress."

Royal Commission on Agriculture and Rural Life. **The Scope and Character of the Investigation.** Report No. 2. Mechanization and Costs. Submitted to the Government of Saskatchewan, 1955. pp. xv + 175.

This study was

designed to measure the degree of mechanization, and to measure, in an economic sense, the effect of mechanization on productivity, population, farm costs, credit, and implement services. From these measurements can be derived some of the basic characteristics of our present agricultural situation: the productivity of our land resources, the capital and cost structure of farming, and the farm labor force.

This report is organized into nine chapters. The first one serves as an *Introduction* and the other eight deal with: *Mechanization and the Changing Character of Rural Life*; *Problems Related to Mechanization: The Opinions of Saskatchewan Communities and Organizations*; *Trends in Mechanization of Saskatchewan Farms*; *The Economic Effects of Mechanization*; *The Social Effects of Mechanization*; *Future Characteristics of Farm Mechanization*; *Proposals of the Public to Meet Problems Associated with Mechanization*; and *Conclusions and Recommendations*.

The report also includes five *Appendices* on *Cost of Farm Machinery*; *Supporting Data for Illustrations*; *Description of Sample Farms*; *Analysis of Variance*; *Estimated Demand for Tractors and Combines*; and *Calculation of the Amount of Land Released for Other Uses Through the Decrease in Number of Horses on Saskatchewan Farms*.

Farm Planning and Budgeting Services in Farm Management Advisory Work. Report on a Training Course held in the United Kingdom, March 19 to April 3, 1954 and sponsored by the European Productivity Agency of the Organisation for European Economic Co-operation by arrangement with the United States Foreign Operations Administration. 1955. pp. 211.

Disponibilités, Modes de Vente et Lieux d'Écoulement des Produits Agricoles, 1950-51-52, Région de Québec, No. 3. Québec, Division des Marchés et des Enquêtes, Service de l'Économie Rurale, Ministère de l'Agriculture de la Province de Québec. 1954. pp. III et 393.

The fourth in a series of eleven statistical reports on supplies and marketing of agricultural products, compiled by the Rural Economics Service of the Quebec Department of Agriculture. It concerns the Quebec region, which includes the counties of Arthabaska, Beauce, Bellechasse, Dorchester, Lévis, Lotbinière, Mégantic, Montmorency, Portneuf and Québec.

Some Aspects of Problem Rural Areas in Britain. Wibberley, G.P. Dept. of Agricultural Economics, University of London, Wye College, Near Ashford, Kent, England. Reprinted from *The Geographical Journal*, Vol. CXX, Part I, March 1954. pp. 43-61.

A paper dealing with undeveloped agricultural areas in Britain and, more specifically, with the problems of areas on the margin of farming and living and difficult "lowland areas". The author describes some policies designed to lead to "An expansion in agricultural output, an increase in rural income, and improved standards of living in the countryside".

THE ECONOMIC ANNALIST

A BIMONTHLY REVIEW OF AGRICULTURAL BUSINESS
MARKETING SERVICE, ECONOMICS DIVISION,
DEPARTMENT OF AGRICULTURE, OTTAWA

Published by Authority of the Right Hon. James G. Gardiner, Minister of Agriculture

INDEX, Volume XXV, 1955

	PAGE
Adjusting Cash Land Rents to Changes in Price Levels .. <i>D. J. Packman</i>	39
Aerial Photography and Crop Recognition	
..... <i>D. J. Packman and L. E. Philpotts</i>	53
Agriculture and the GATT Review of 1954-55	<i>A. E. Richards</i> 78
Blueberry Enterprise in Nova Scotia and New Brunswick, The	<i>G. C. Retson and E. S. Eaton</i> 36
Changes in Food Consumption Patterns	<i>L. E. Drayton</i> 105
Changing Conditions on Specialized Wheat Farms in Southern Alberta	<i>V. Gilchrist</i> 16
Comparative Costs of Furrow and Sprinkler Irrigation of Tree Fruits in the Okanagan Valley ..	<i>C. H. Ferries and J. C. Wilcox</i> 63
Consumer Acceptance of Ontario Fresh Market Peaches ..	<i>J. M. Fitzpatrick</i> 58
Co-operative Ownership of Farm Machinery in Nova Scotia, Farmers' Experience in	<i>G. C. Retson and V. A. Heighton</i> 82
Co-operatives, Financial Structure of Canadian Purchasing	<i>H. K. Ingersoll</i> 86
Co-operatives, The Financial Structure of Canadian Local or District Marketing	<i>H. K. Ingersoll</i> 126
Cost of Producing Crops in the Eastern Townships of Quebec	<i>L. R. Fortier and A. Gosselin</i> 131
Cropping Practices in the Eastern Townships of Quebec	<i>L. R. Fortier and A. Gosselin</i> 41
Dairy Farms of the Lower Fraser Valley, British Columbia, 1953 Some Economic Aspects of Farm Organization and Management on	<i>C. H. Ferries</i> 29
Economic Situation—February	3
—April	27
—June	51
—August	75
—October	99
—December	123

	PAGE
Effects of Beef Quality on Prices in the Toronto Area, 1954, The G. E. Woollam and K. E. Cann	66
Eggs, Recent World Trends in Trade, Consumption and Prices of E. Jaska	90
Farm Business in Northern Alberta, 1953, The Gordon Haase	8
Farmers' Experience in Co-operative Ownership of Farm Machinery in Nova Scotia G. C. Retson and V. A. Heighton	82
Federal Agricultural Programs Affecting Prices of Farm Products, March 1, 1954, to February 28, 1955 Marjorie R. Cameron	32
Financial Structure of Canadian Purchasing Co-operatives H. K. Ingersoll	86
Financial Structure of Canadian Local or District Marketing Co- operatives, The H. K. Ingersoll	126
Food Consumption Patterns, Changes in L. E. Drayton	105
Forage Production in Manitoba, Trends in W. G. Smith	10
Forecasting Hog Marketing L. B. Kristjanson	108
Freight Rate Reductions, Some Railway E. P. Reid	6
Functions of the United Kingdom Marketing Boards ..Roger Perreault	137
GATT Review of 1954-55, Agriculture and the A. E. Richards	78
Irrigation of Tree Fruits in the Okanagan Valley, Comparative Costs of Furrow and Sprinkler C. H. Ferries and J. C. Wilcox	63
Landlord-Tenant Situation on 200 Southern Ontario Farms, 1953, The D. J. Packman	20
Locker Plants in Food Marketing, Significance of L. E. Drayton	60
Marketing Boards, Functions of the United Kingdom Roger Perrault	137
Northern Alberta, 1953, The Farm Business in Gordon Haase	8
Organization Features of Farms on Light, Medium and Heavy Textured Soils in the Prairie Area of Saskatchewan H. L. Biehn	68
Peaches, Consumer Acceptance of Ontario Fresh Market, J. M. Fitzpatrick	58
Policies, Review of Canadian Agricultural Margaret I. Dunbabin	101
Prairie Area of Saskatchewan, Organization Features of Farms on Light, Medium and Heavy Textured Soils in the H. L. Biehn	68
Prices in the Toronto Area, The Effects of Beef Quality on..... G. E. Woollam and K. E. Cann	66

	PAGE
Prices of Farm Products, March 1, 1954, to February 28, 1955, Federal Agricultural Programs Affecting	Marjorie R. Cameron 32
Prices of Food Products, Some Notes on Retail and Farm ..	G. E. Woollam 23
Publications reviewed:	
June — <i>Economic Activity Analysis</i> , edited by Oskar Morgenstern	72
August— <i>The Story of FAO</i> , by Gove Hambidge, in review article <i>Let There be Bread</i>	93
— <i>Farm Management Economics</i> , by Earl O. Heady and Harold R. Jensen	96
— <i>Contemporary Readings in Agricultural Economics</i> , edited by Harold G. Halcrow	96
Recent World Trends in Trade, Consumption and Prices of Eggs, <i>E. Jaska</i>	90
Review of Canadian Agricultural Policies	Margaret I. Dunbabin 101
Some Economic Aspects of Farm Organization and Management on Dairy Farms of the Lower Fraser Valley, British Columbia, 1953, ...	C. H. Ferries 29
Significance of Locker Plants in Food Marketing	L. E. Drayton 60
Some Notes on Retail and Farm Prices of Food Products ..	G. E. Woollam 23
Some Railway Freight Rate Reductions	E. P. Reid 6
Sunflower Production on Manitoba Farms	G. B. McNeill 114
Southern Alberta, Changing Conditions on Specialized Wheat Farms in	V. Gilchrist 16
Trends in Forage Production in Manitoba	W. G. Smith 10

Gov.Doc. Canada.Agriculture,Dept.of
Can

Ag

The economic annalist.
Vol.23-25(Feb.1953-Dec.1955)

PLEASE DO NOT REMOVE
CARDS OR SLIPS FROM THIS POCKET

UNIVERSITY OF TORONTO LIBRARY



3 1761 11467627 3